Allied Telesyn International

CentreCOM 3600 Series Hub/Repeaters

AT-3624TS
AT-3624TRS

Installation Manual

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Electrical Safety and Installation Requirements

RADIATED ENERGY

U.S. Federal Communications

Note: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note: Modifications or changes not expressly approved by the manufacturer or the FCC, can void your right to operate this equipment.

Canadian Department of Communications

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appariel numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

STANDARDS: This product meets the following standards

RFI Emission	EN55022 Class A

WARNING: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Immunity	EN50082-1
Electrical Safety	EN60950, UL1950, CSA 950

SAFETY
ELECTRICAL NOTICES
WARNING: ELECTRIC SHOCK HAZARD
To prevent ELECTRIC shock, do not remove cover. No user-serviceable parts inside. This unit contains HAZARDOUS VOLTAGES and should only be opened by a trained and qualified technician. To avoid the possibility of ELECTRIC SHOCK, disconnect electric power to the product before connecting or disconnecting the LAN cables.

LIGHTNING DANGER
DANGER: DO NOT WORK on equipment or CABLES during periods of LIGHTNING ACTIVITY.

CAUTION: POWER CORD IS USED AS A DISCONNECTION DEVICE. TO DE-ENERGISE EQUIPMENT, disconnect the power cord.

INSTALLATION
ELECTRICAL—AUTO VOLTAGE ADJUSTMENT
This product will automatically adjust to any voltage between the ranges shown on the label.

ELECTRICAL—TYPE CLASS 1 EQUIPMENT
THIS EQUIPMENT MUST BE EARTHED. Power plug must be connected to a properly wired earth ground socket outlet. An improperly wired socket outlet could place hazardous voltages on accessible metal parts.

ELECTRICAL—CORD NOTICE
Use power cord, maximum 4.5 meters long, rated 6 amp minimum, 250V, made of HAR cordage molded IEC 320 connector on one end and on the other end a plug approved by the country of end use.

MOUNTING INSTRUCTIONS
CAUTION: These models are designed for operation in the HORIZONTAL position. VERTICAL MOUNTING must not be done without the use of an Allied Telesyn vertical mount chassis designed for this purpose.

CAUTION: Air vents must not be blocked and must have free access to the room ambient air for cooling.

CAUTION: DO NOT detach rubber feet from the product unless an Allied Telesyn vertical mounting chassis is being used.

OPERATING TEMPERATURE
This product is designed for a maximum ambient temperature of 40° C.

ALL COUNTRIES: Install product in accordance with local and National Electrical Codes.

NORMEN: Dieses Produkt erfüllt die Anforderungen der nachfolgenden Normen.

Hochfrequenzstörung	EN55022 Klasse A

WARNUNG: Bei Verwendung zu Hause kann dieses Produkt Funkstörungen hervorrufen. In diesem Fall müßte der Anwender angemessene Gegenmaßnahmen ergreifen.

Störsicherheit	EN50082-1
Elektrische Sicherheit	EN60950, UL1950, CSA 950

SICHERHEIT

ACHTUNG: GEFÄHRLICHE SPANNUNG
Das Gehäuse nicht öffnen. Das Gerät enthält keine vom Benutzer wartbaren Teile. Das Gerät steht unter Hochspannung und darf nur von qualifiziertem technischem Personal geöffnet werden. Vor Anschluß der LAN-Kabel, Gerät vom Netz trennen.

GEFAHR DURCH BLITZSCHLAG
GEFAHR: Keine Arbeiten am Gerät oder an den Kabeln während eines Gewitters ausführen.

VORSICHT: DAS NETZKABEL DIENT ZUM TRENNEN DER STROMVERSORGUNG. ZUR TRENNUNG VOM NETZ, KABEL AUS DER STECKDOSE ZIEHEN.

INSTALLATION
AUTOMATISCHE SPANNUNGSEINSTELLUNG
Dieses Gerät stellt sich automatisch auf die auf dem Etikett aufgeführten Spannungswerte ein.

KLASSE 1 GERÄTE
DIESE GERÄTE MÜSSEN GEERDET SEIN. Der Netzstecker darf nur mit einer vorschriftsmäßig geerdeten Steckdose verbunden werden. Ein unvorschriftsmäßiger Anschluß kann das Metallgehäuse Teile unter gefährliche elektrische Spannungen setzen.

NETZKABEL
Das Netzkabel sollte eine maximale Länge von 4,5 Metern, einen Nennwert von mindestens 6 A und 250 V haben, aus HAR-Material hergestellt und mit einer gepreßten, IEC 320 entsprechenden, Anschlußverbindung an einem Ende, und am anderen Ende mit einem im Land des Endverbrauchers geprüften Stecker ausgestattet sein.

MONTAGEANWEISUNGEN
VORSICHT: Diese Modelle sind für Betrieb in horizontaler Position entworfen worden. Das Gerät darf NICHT OHNE Gebrauch eines dafür entworfenen Allied Telesyn-Vertikalmontagegestells in VERTIKALER Position montiert werden.

VORSICHT: Die Entlüftungsöffnungen dürfen nicht versperrt sein und müssen zum Kühlen freien Zugang zur Raumluft haben.

VORSICHT: Die Gummifüße NICHT ENTFERNEN, außer bei Gebrauch des Allied Telesyn-Vertikalmontagegestells.

BETRIEBSTEMPERATUR
Dieses Produkt wurde für den Betrieb in einer Umgebungstemperatur von nicht mehr als 40˚ C entworfen.

ALLE LÄNDER: Installation muß örtlichen und nationalen elektrischen Vorschriften entsprechen.

Radiofrekvens forstyrrelsesemission	EN55022 Klasse A

ADVARSEL: I et hjemligt miljø kunne dette produkt forårsage radio forstyrrelse. Bliver det tilfældet, påkræves brugeren muligvis at tage tilstrækkelige foranstaltninger.

Immunitet	EN50082-1
Elektrisk sikkerhed.	EN60950, UL1950, CSA 950.

SIKKERHED
ELEKTRISKE FORHOLDSREGLER
ADVARSEL: RISIKO FOR ELEKTRISK STØD
For at forebygge ELEKTRISK stød, undlad at åbne apparatet. Der er ingen indre dele, der kan repareres af brugeren. Denne enhed indeholder LIVSFARLIGE STRØMSPÆNDINGER og bør kun åbnes af en uddannet og kvalificeret tekniker. For at undgå risiko for ELEKTRISK STØD, afbrydes den elektriske strøm til produktet, før LAN-kablerne monteres eller afmonteres.

FARE UNDER UVEJR
FARE: UNDLAD at arbejde på udstyr eller KABLER i perioder med LYNAKTIVITET.

ADVARSEL: DEN STRØMFØRENDE LEDNING BRUGES TIL AT AFBRYDE STRØMMEN. SKAL STRØMMEN TIL APPARATET AFBRYDES, tages ledningen ud af stikket.

INSTALLATION
ELEKTRISK—AUTOMATISK SPÆNDINGSREGULERING
Dette apparat vil automatisk tilpasse sig enhver spænding indenfor de værdier, der er angivet på etiketten.

ELEKTRISK—KLASSE 1-UDSTYR
DETTE UDSTYR KRÆVER JORDFORBINDELSE. Stikket skal være forbundet med en korrekt installeret jordforbunden stikkontakt. En ukorrekt installeret stikkontakt kan sætte livsfarlig spænding til tilgængelige metaldele.

ELEKTRISK—LEDNING
Anvend ledning af maksimum 4,5 meters længde, med en kapacitet på minimum 6 amp., 250 v, bestående af en IEC 320 connector med indstøbt HAR ledning i den ene ende og et stik i den anden ende godkendt der er af myndighederne i brugerlandet.

INSTRUKTIONER FOR OPSTILLING
ADVARSEL: Disse modeller er konstrueret til at betjenes i HORISONTAL position (vandret). VERTIKAL OPSTILLING (lodret) må IKKE FORETAGES uden brug af et Allied Telesyn vertikalt monteringsstel konstrueret til dette formål.

ADVARSEL: Ventilationsåbninger må ikke blokeres og skal have fri adgang til den omgivende luft i rummet for afkøling.

ADVARSEL: UNDLAD at fjerne gummisoklerne fra apparatet, med mindre der anvendes et Allied Telesyn vertikalt monteringsstel.

BETJENINGSTEMPERATUR
Dette apparat er konstrueret til en omgivende temperatur på maksimum 40 grader C.

ALLE LANDE: Installation af produktet skal ske i overensstemmelse med lokal og national lovgivning for elektriske installationer.

RFI Emissie EN55022 Klasse A

WAARSCHUWING: Binnenshuis kan dit product radiostoring veroorzaken, in welk geval de gebruiker verplicht kan worden om gepaste maatregelen te nemen.

Immuniteit EN50082-1
Electrische Veiligheid EN60950, UL1950, CSA 950

VEILIGHEID
WAARSCHUWINGEN MET BETREKKING TOT ELEKTRICITEIT
WAARSCHUWING: GEVAAR VOOR ELEKTRISCHE SCHOKKEN
Gelieve het deksel niet te verwijderen, teneinde ELEKTRISCHE schokken te voorkomen. Binnenin bevinden zich geen onderdelen die door de gebruiker kunnen worden onderhouden. Dit toestel staat onder GEVAARLIJKE SPANNING en mag alleen worden geopend door een daartoe opgeleide en bevoegde technicus. Om het gevaar op ELEKTRISCHE SCHOKKEN te vermijden, moet u het toestel van de stroombron ontkoppelen alvorens de LAN-kabels te koppelen of ontkoppelen.

GEVAAR VOOR BLIKSEMINSLAG
GEVAAR: NIET aan toestellen of KABELS WERKEN bij BLIKSEM.

WAARSCHUWING: HET TOESTEL WORDT UITGESCHAKELD DOOR DE STROOMKABEL TE ONTKOPPELEN. OM HET TOESTEL STROOMLOOS TE MAKEN: de stroomkabel ontkoppelen.

INSTALLATIE
ELEKTRISCH—AUTOMATISCHE AANPASSING VAN DE SPANNING
Dit toestel past zich automatisch aan elke spanning aan, tussen de waarden op het label vermeld.

ELEKTRISCHE—TOESTELLEN VAN KLASSE 1
DIT TOESTEL MOET GEAARD WORDEN. De stekker moet aangesloten zijn op een juist geaarde contactdoos. Een onjuist geaarde contactdoos kan de metalen onderdelen waarmee de gebruiker eventueel in aanraking komt onder gevaarlijke spanning stellen.

ELEKTRISCHE—SNOEREN
Gebruik een elektrisch snoer, maximum 4,5 meter lang, berekend voor ten minste 6 ampère, 250 V, uit HAR vervaardigd, met aan het ene uiteinde een gevormde IEC 320 stekker en aan het andere uiteinde een stekker die goedgekeurd is door het land waar het toestel zal worden gebruikt.

MONTAGE-INSTRUCTIES
WAARSCHUWING: Deze modellen zijn ontworpen om te werken in HORIZONTALE stand.
VERTICALE MONTAGE mag NIET UITGEVOERD WORDEN, tenzij een daartoe speciaal ontworpen Allied Telesyn chassis voor verticale montage wordt gebruikt.

WAARSCHUWING: De ventilatiegaten mogen niet worden gesperd en moeten de omgevingslucht ongehinderd toelaten voor afkoeling.

WAARSCHUWING: De rubberen voetjes NIET van het produkt LOSMAKEN behalve wanneer een chassis voor vertikale montage van Allied Telesyn wordt gebruikt.

BEDRIJFSTEMPERATUUR
De omgevingstemperatuur voor dit produkt mag niet meer bedragen dan 40 graden Celsius.

ALLE LANDEN: het toestel installeren overeenkomstig de lokale en nationale elektrische voorschriften.

NORMES : ce produit est conforme aux normes de suivantes :

Emission d'interférences radioélectriques EN55022 Classe

MISE EN GARDE : dans un environnement domestique, ce produit peut provoquer des interférences radioélectriques. Auquel cas, l'utilisateur devra prendre les mesures adéquates.

Immunité EN50082 - 1
Sécurité électrique EN60950, UL1950, CSA 950

SECURITE
INFORMATION SUR L'ELECTRICITE
AVERTISSEMENT: DANGER D'ELECTROCUTION
Pour empêcher les dangers d'ELECTROCUTION, ne pas enlever le couvercle. L'équipement ne contient aucun élément réparable par l'utilisateur. Cet appareil comprend des TENSIONS DANGEREUSES et ne doit être ouvert que par un technicien dûment qualifié. Pour éviter tout risque d'ELECTROCUTION, débrancher l'appareil de la prise de courant avant de connecter ou de déconnecter les câbles LAN.

DANGER DE FOUDRE
DANGER: NE PAS MANIER l'équipement ou les CABLES pendant les périodes d'activité orageuse.

ATTENTION: LE CORDON D'ALIMENTATION SERT DE MISE HORS CIRCUIT POUR COUPER L'ALIMENTATION DE L'APPAREIL, débranchez le cordon.

INSTALLATION
ELECTRICITE—REGLAGE DE TENSION AUTOMATIQUE
Ce produit peut s'ajuster automatiquement sur n'importe quelle tension comprise dans la plage indiquée sur le label.

ELECTRICITE—EQUIPEMENT DE CLASSE 1
CET APPAREIL DOIT ETRE MIS A LA TERRE. La prise de courant doit être branchée dans une prise femelle correctement mise à la terre. Sinon, des tensions dangereuses risqueraient d'atteindre les pièces métalliques accessibles à l'utilisateur.

ELECTRICITE—INFORMATION SUR LE CORDON
Utiliser un cordon secteur de 4,5 mètres de long maximum, calibré à 6 ampères minimum, 250V, et fabriqué en câblage HAR avec connecteur IEC 32C moulé à une extrémité et à l'autre extrémité, une prise de courant mâle répondant aux normes du pays d'utilisation.

INSTRUCTIONS DE MONTAGE
ATTENTION: Ces modèles sont destiné à fonctionner en position horizontale. L'appareil NE DOIT PAS être utilisé en MONTAGE VERTICAL sans employer un châssis de montage vertical Allied Telesyn conçu à cet effet.

ATTENTION: Ne pas bloquer les fentes d'aération, ce qui empêcherait l'air ambiant de circuler librement pour le refroidissement.

ATTENTION: NE PAS ôter les pattes d'attache en caoutchouc du produit, à moins d'utiliser un châssis de montage vertical Allied Telesyn.

TEMPERATURE DE FONCTIONNEMENT
Ce produit est capable de tolérer une température ambiante maximum de 40 degrés Celsius

POUR TOUS PAYS: Installer le produit conformément aux normes électriques nationales et locales.

Radioaaltojen häirintä	EN55022 Luokka A

VAROITUS: Kotiolosuhteissa tämä laite voi aiheuttaa radioaaltojen häiröitä, missä tapauksessa laitteen käyttäjän on mahdollisesti ryhdyttävä tarpeellisiin toimenpiteisiin.

Kestävyys	EN50082-1
Sähköturvallisuus	EN60950, UL1950, CSA 950

TURVALLISUUS
SÄHKÖÖN LIITTYVIÄ HUOMAUTUKSIA
VAROITUS: SÄHKÖISKUVAARA
Estääksesi SÄHKÖISKUN älä poista kantta. Sisällä ei ole käyttäjän huollettavissa olevia osia. Tämä laite sisältää VAARALLISIA JÄNNITTEITÄ ja sen voi avata vain koulutettu ja pätevä teknikko. Välttääksesi SÄHKÖISKUN mahdollisuuden katkaise sähkövirta tuotteeseen ennen kuin liität tai irrotat paikallisverkon (LAN) kaapelit.

SALAMANISKUVAARA
HENGENVAARA: ÄLÄ TYÖSKENTELE laitteiden tai KAAPELEIDEN KANSSA SALAMOINNIN AIKANA.

HUOMAUTUS: VIRTAJOHTOA KÄYTETÄÄN VIRRANKATKAISULAITTEENA. VIRTA KATKAISTAAN irrottamalla virtajohto.

ASENNUS
SÄHKÖ—AUTOMAATTINEN JÄNNITTEENSÄÄTÖ
Tämä tuote säätää automaattisesti mihin tahansa jännitteeseen ohjetarrassa annettujen arvojen välillä.

SÄHKÖ—TYYPPILUOKAN 1 LAITTEET
TÄMÄ LAITE TÄYTYY MAADOITTAA. Pistoke täytyy liittää kunnollisesti maadoitettuun pistorasiaan. Virheellisesti johdotettu pistorasia voi altistaa metalliosat vaarallisille jännitteille.

SÄHKÖ—JOHTOON LIITTYVÄ HUOMAUTUS
Käytä seuraavanlaista virtajohtoa: maksimipituus 4,5 metriä, minimiteho 6 ampeeria, 250 V, valmistettu HAR-johdostosta, muovattu IEC 320 -liitin toisessa päässä ja käyttömaassa hyväksytty pistoke toisessa päässä.

ASENNUSSOHJEET
HUOMAUTUS: Nämä mallit on suunniteltu käytettäviksi VAAKA-asennossa. PYSTYASENNUSTA EI SAA TEHDÄ ilman Allied Telesyn -pystykiinnitysalustaa, joka on suunniteltu tähän tarkoitukseen.

HUOMAUTUS: Ilmavaihtoreikiä ei pidä tukkia ja niillä täytyy olla vapaa yhteys ympäröivään huoneilmaan, jotta ilmanvaihto tapahtuisi.

HUOMAUTUS: ÄLÄ irroita kumijalkoja tuotteesta, ellei Allied Telesyn-pystykiinnitysalusta ole käytössä.

KÄYTTÖLÄMPÖTILA
Tämä tuote on suunniteltu ympäröivän ilman maksimilämpötilalle 40° C.

KAIKKI MAAT: Asenna tuote paikallisten ja kansallisten sähköturvallisuusmääräysten mukaisesti.

Emissione RFI (interferenza di radiofrequenza)	EN55022 Classe A

AVVERTENZA: in ambiente domestico questo prodotto potrebbe causare radio interferenza. In questo caso potrebbe richiedersi all'utente di prendere gli adeguati provvedimenti.

Immunità	EN50082-1
Sicurezza elettrica	EN60950, UL1950, CSA 950

NORME DI SICUREZZA
AVVERTENZE ELETTRICHE
ATTENZIONE: PERICOLO DI SCOSSE ELETTRICHE
Per evitare SCOSSE ELETTRICHE non asportare il coperchio. Le componenti interne non sono riparabili dall'utente. Questa unità ha TENSIONI PERICOLOSE e va aperta solamente da un tecnico specializzato e qualificato. Per evitare ogni possibilità di SCOSSE ELETTRICHE, interrompere l'alimentazione del dispositivo prima di collegare o staccare i cavi LAN.

PERICOLO DI FULMINI
PERICOLO: NON LAVORARE sul dispositivo o sui CAVI durante PRECIPITAZIONI TEMPORALESCHE.

ATTENZIONE: IL CAVO DI ALIMENTAZIONE È USATO COME DISPOSITIVO DI DISATTIVAZIONE.
PER TOGLIERE LA CORRENTE AL DISPOSITIVO staccare il cavo di alimentazione.

INSTALLAZIONE
ELETTRICITÀ—REGOLAZIONE AUTOMATICA DELLA TENSIONE
Questo prodotto regolerà automaticamente la tensione ad un valore compreso nella gamma indicata sull'etichetta.

ELETTRICITÀ—DISPOSITIVI DI CLASSE 1
QUESTO DISPOSITIVO DEVE AVERE LA MESSA A TERRA. La spina deve essere inserita in una presa di corrente specificamente dotata di messa a terra. Una presa non cablata in maniera corretta rischia di scaricare una tensione pericolosa su parti metalliche accessibili.

ELETTRICITÀ—AVVERTENZA SUL CAVO
Usare un cavo della lunghezza massima di metri 4,5, con capacità minima di 6 A, 250 V, di filo HAR, dotato di connettore stampato IEC 320 ad un'estremità e di spina approvata dal paese di destinazione all'altra.

ISTRUZIONI PER IL MONTAGGIO
ATTENZIONE: questi modelli sono concepiti per il funzionamento in posizione ORIZZONTALE. NON È POSSIBILE EFFETTUARE IL MONTAGGIO VERTICALE senza utilizzare l'apposito telaio per il montaggio verticale Allied Telesyn.

ATTENZIONE: le prese d'aria non vanno ostruite e devono consentire il libero ricircolo dell'aria ambiente per il raffreddamento.

ATTENZIONE: NON staccare il piedino in gomma dal prodotto tranne qualora si utilizzi il telaio Allied Telesyn per il montaggio verticale.

TEMPERATURA DI FUNZIONAMENTO
Questo prodotto è concepito per una temperatura ambientale massima di 40 gradi centigradi.

TUTTI I PAESI: installare il prodotto in conformità alle vigenti normative elettriche nazionali.

RFI stråling	EN55022 Klasse A

ADVARSEL: Hvis dette produktet benyttes til privat bruk, kan produktet forårsake radioforstyrrelse. Hvis dette skjer, må brukeren ta de nødvendige forholdsregler.

Immunitet	EN50082-1
Elektrisk sikkerhet	EN60950, UL1950, CSA 950

SIKKERHET
ELEKTRISKE MEDDELELSE
ADVARSEL: FARE FOR ELEKTRISK SJOKK
For å unngå ELEKTRISK sjokk, må dekslet ikke tas av. Det finnes ingen deler som du kan bruke på innsiden. Denne enheten inneholder FARLIGE SPENNING, og må kun åpnes av en opplært, kvalifisert tekniker. For å unngå muligheten av ELEKTRISK SJOKK, må den elektriske strømmen til produktet være av når du slår LAN ledninger av og på.

FARE FOR LYNANTENNELSE
FARE: MÅ IKKE BRUKES på utstyr eller ledninger mens LYN-AKTIVITET er i gang.

FORSIKTIG: STRØMLEDNINGEN BRUKES TIL Å SLÅ APPARATET AV. HVIS DU VIL DEAKTIVISERE UTSTYRET, må du fjerne strømledningen.

INSTALLASJON
ELEKTRISK—AUTO SPENNINGSTILPASSING
Dette produktet vil automatisk bli tilpasset hvilken som helst strøminnstilling i de områdene som vises på etiketten.

ELEKTRISKE—TYPE 1. KLASSE UTSTYR
DETTE UTSTYRET MÅ JORDES. Strømkontakten må være tilkoplet en korrekt jordet grunnstøpselkontakt. En støpselkontakt som ikke er jordet på rett måte, kan tilføre farlig spenning til lett tilgjengelige metalldeler.

ELEKTRISKE—MEDDELELSE OM LEDNINGER
Bruk en strømledning av maksimal størrelse 4,5 m i lengde, vurdert for minst av 6 amp, 250V, fremstilt av HAR ledning IEC 320 koplingsstykke på den ene kanten og på den andre kanten en plugg som har blitt godkjent i det landet hvor den siste brukeren befinner seg.

BRUKSANVISNINGER FOR MONTERING
FORSIKTIG: Disse modellene er beregnet til bruk i HORISONTAL stilling. VERTIKAL MONTERING må IKKE UTFØRES uten bruk av et Allied Telesyn vertikal monteringschassis som er spesiallaget til dette formål.

FORSIKTIG: Luftventilene må ikke blokkeres og må ha fri tilgang til luft med romtemperatur for avkjøling.

FORSIKTIG: Gummiføttene må IKKE fjernes fra produktet med mindre en Allied Telesyn vertikal monteringschassis er i bruk.

DRIFTSTEMPERATUR
Dette produktet har blitt fremstilt til bruk med maksimum romtemperatur på 40 grader celsius.

ALLE LAND: Produktet må installeres i samsvar med de lokale og nasjonale elektriske koder.

Emissão de interferência de radiofrequência EN55022 Classe A

AVISO: Num ambiente doméstico este produto pode causar interferência na radiorrecepção e, neste caso, pode ser necessário que o utente tome as medidas adequadas.

Imunidade EN50082-1
Segurança Eléctrica EN60950, UL1950, CSA 950

SEGURANÇA
AVISOS SOBRE CARACTERÍSTICAS ELÉTRICAS
ATENÇÃO: PERIGO DE CHOQUE ELÉTRICO
Para evitar CHOQUE ELÉTRICO, não retire a tampa. Não contém peças que possam ser consertadas pelo usuário. Este aparelho contém VOLTAGENS PERIGOSAS e só deve ser aberto por um técnico qualificado e treinado. Para evitar a possibilidade de CHOQUE ELÉTRICO, desconecte o aparelho da fonte de energia elétrica antes de conectar e desconectar os cabos da LAN.

PERIGO DE CHOQUE CAUSADO POR RAIO
PERIGO: NÃO TRABALHE no equipamento ou nos CABOS durante períodos suscetíveis de QUEDAS DE RAIO.

CUIDADO: O CABO DE ALIMENTAÇÃO É UTILIZADO COMO UM DISPOSITIVO DE DESCONEXÃO.
PARA DESELETRIFICAR O EQUIPAMENTO desconecte o cabo de alimentação.

INSTALAÇÃO
ELÉTRICO—AJUSTE AUTOMÁTICO DE VOLTAGEM
Este produto ajustar-se-á automaticamente a qualquer voltagem que esteja dentro dos limites indicados no rótulo.

ELÉTRICO—EQUIPAMENTOS DO TIPO CLASSE 1
DEVE SER FEITA LIGAÇÃO DE FIO TERRA PARA ESTE EQUIPAMENTO. O plugue deve ser conectado a uma tomada com ligação de fio terra. Tomadas sem ligação de fio terra podem transmitir voltagens perigosas a peças metálicas expostas.

ELÉTRICO—AVISO SOBRE O CABO DE ALIMENTAÇÃO
Use cabo de alimentação com comprimento máximo de 4, 5 metros, com uma capacidade mínima de 6 amp e 250 V, fabricado de material para cabo HAR com conector moldado IEC 320 em uma extremidade e, na outra extremidade, um plugue aprovado para uso no país em questão .

INSTRUÇÕES DE INSTALAÇÃO
CUIDADO: Este modelos foram projetados para funcionar na posição HORIZONTAL. NÃO DEVE SER EFETUADA INSTALAÇÃO VERTICAL sem o uso de um chassis de montagem vertical Allied Telesyn projetado para este fim específico.

CUIDADO: As entradas de ar não devem ser bloqueadas e devem ter acesso livre ao ar ambiente para arrefecimento adequado do aparelho.

CUIDADO: NÃO RETIRE os calços de borracha do produto a menos que esteja sendo usado um chassis de montagem vertical Allied Telesyn.

TEMPERATURA DE FUNCIONAMENTO
Este produto foi projetado para uma temperatura ambiente máxima de 40 graus centígrados.

TODOS OS PAÍSES: Instale o produto de acordo com as normas federais e locais para instalações elétricas.

Emisión RFI EN55022 Clase A

ADVERTENCIA: en un entorno doméstico, este producto puede causar radiointerferencias, en cuyo caso, puede requerirse del usuario que tome las medidas que sean convenientes al respecto.

Inmunidad EN50082-1
Seguridad eléctrica EN60950, UL1950, CSA 950

SEGURIDAD
AVISOS ELECTRICOS
ADVERTENCIA: PELIGRO DE ELECTROCHOQUE
Para evitar un ELECTROCHOQUE, no quite la tapa. No hay ningún componente en el interior al cual puede prestar servicio el usuario. Esta unidad contiene VOLTAJES PELIGROSOS y sólo deberá abrirla un técnico entrenado y calificado. Para evitar la posibilidad de ELECTROCHOQUE desconecte la corriente eléctrica que llega al producto antes de conectar o desconectar los cables LAN.

PELIGRO DE RAYOS
PELIGRO: NO REALICE NINGUN TIPO DE TRABAJO O CONEXION en los equipos o en LOS CABLES durante TORMENTAS DE RAYOS

ATENCION: EL CABLE DE ALIMENTACION SE USA COMO UN DISPOSITIVO DE DESCONEXION. PARA DESACTIVAR EL EQUIPO, desconecte el cable de alimentación.

INSTALACION
ELECTRICO—AUTO-AJUSTE DE TENSION
Este producto se ajustará automáticamente a cualquier tensión entre los valores máximos y mínimos indicados en la etiqueta.

ELECTRICO—EQUIPO DEL TIPO CLASE 1
ESTE EQUIPO TIENE QUE TENER CONEXION A TIERRA. El cable tiene que conectarse a un enchufe con tierra debidamente instalado. Un enchufe que no está correctamente instalado podría ocasionar tensiones peligrosas en las partes metálicas están expuestas.

ELECTRICO—ADVERTENCIA SOBRE EL CABLE
Use un cable eléctrico con un máximo de 4, 5 metros de largo, con una capacidad mínima de 6 amperios, 250 V, hecho de cable HAR, con el conector moldeado IEC 320 en un extremo y con un enchufe que está aprobado por el país de uso final en el otro.

INSTRUCCIONES DE MONTAJE
ATENCION: Estos modelos están diseñados para operar en posición HORIZONTAL. NO SE DEBEN MONTAR VERTICALMENTE sin el uso de un chasis de montaje vertical de Allied Telesyn que se ha diseñado para este fin.

ATENCION: Las aberturas para ventilación no deberán bloquearse y deberán tener acceso libre al aire ambiental de la sala para su enfriamiento.

ATENCION: NO separe las patas de goma del producto a menos que se esté usando un chasis de montaje vertical de Allied Telesyn.

TEMPERATURA REQUERIDA PARA LA OPERACIÓN
Este producto está diseñado para una temperatura ambiental máxima de 40 grados C.

PARA TODOS LOS PAÍSES: Monte el producto de acuerdo con los Códigos Eléctricos locales y nacionales.

Radiostörning	EN55022 Klass A

VARNING: Denna produkt kan ge upphov till radiostörningar i hemmet, vilket kan tvinga användaren till att vidtaga erforderliga åtgärder.

Immunitet	EN50082-1
Elsäkerhet	EN60950, UL1950, CSA 950

SÄKERHET
TILLKÄNNAGIVANDEN BETRÄFFANDE ELEKTRICITETSRISK:
RISK FÖR ELEKTRISK STÖT
För att undvika ELEKTRISK stöt, ta ej av locket. Det finns inga delar inuti som behöver underhållas. Denna apparat är under HÖGSPÄNNING och får endast öppnas av en utbildad kvalificerad tekniker. För att undvika ELEKTRISK STÖT, koppla ifrån produktens strömanslutning innan LAN-kablarna ansluts eller kopplas ur.

FARA FÖR BLIXTNEDSLAG
FARA: ARBETA EJ på utrustningen eller kablarna vid ÅSKVÄDER.

VARNING: NÄTKABELN ANVÄNDS SOM STRÖMBRYTARE FÖR ATT KOPPLA FRÅN STRÖMMEN, dra ur nätkabeln.

INSTALLATION
ELEKTRISKT—AUTOMATISK SPÄNNINGSJUSTERING
Denna produkt justeras automatiskt till alla spänningar inom omfånget som indikeras på produktens märkning.

ELEKTRISKT—TYP KLASS 1 UTRUSTNING
DENNA UTRUSTNING MÅSTE VARA JORDAD. Nätkabeln måste vara ansluten till ett ordentligt jordat uttag. Ett felaktigt uttag kan göra att närliggande metalldelar utsätts för högspänning. Apparaten skall anslutas till jordat uttag, när den ansluts till ett nätverk.

ELEKTRISKT—ANMÄRKNING BETRÄFFANDE KABELN
Använd en kabel med maximum längd 4,5 meter och minimum 6 amp nominal, 250V, av HAR kabelfabrikat med ett specialutformat IEC 320-kontaktdon i ena änden och i den andra en plugg som godkänts i landet där produkten används.

MONTERINGSINSTRUKTIONER
VARNING: Dessa modeller är konstruerade för användning i HORISONTALLÄGE. VERTIKALMONTERING får EJ UTFÖRAS utan att ett Allied Telesyn specialkonstruerat vertikalt monteringschassi används.

VARNING: Luftventilerna får ej blockeras och måste ha fri tillgång till omgivande rumsluft för avsvalning.

VARNING: Ta ej bort gummifötterna från produkten om inte ett Allied Telesyn vertikalt monteringschassi används.

DRIFTSTEMPERATUR
Denna produkt är konstruerad för rumstemperatur ej överstigande 40 grader Celsius.

ALLA LÄNDER: Installera produkten i enlighet med lokala och statliga bestämmelser för elektrisk utrustning.

Table of Contents

Electrical Safety and Installation Requirements iii

Chapter 1

Overview 1
CentreCOM AT-3624TS and AT-3624TRS Hubs 1
Features 2
Configurations 3
Controllers 4
Connectivity 4
Chassis Arrangements 5
Further Information 6

Chapter 2

Hardware Installation 7
Site Preparation 7
Location 7
Ventilation 7
Power 7
Installing Hubs 8
Port Configurations 11
Network Ports 11
AUI Port 11
Station Ports 12
Back Panel Features 12
LED Displays 12
Hub Status Indicators 13
Port Status Indicators 13

Chapter 3

AT-3624TS Connectivity 15
Features 16
Configurations 16
Controllers 17
AT-3624TS Port Configurations 17
Network Port 17
Station Ports 18
UTP Hub-to-MAU Wiring 22
LED Displays 22
Hub Indicators 22
Port Indicators 22
Back Panel Features 23
Sample Installations of the AT-3624TS Module 23

Chapter 4

AT-3624TRS Connectivity 29
Features 30
Configurations 30
Controllers 31
AT-3624TRS Port Configurations 31
Network Port 31
Station Ports 32
UTP Hub-to-MAU Wiring 32
LED Displays 32
..... 32
Hub Indicators 32
Port Indicators 33
Back Panel Features 34
Sample Installations of the AT-3624TRS Module 34

Chapter 5

Troubleshooting 39

Appendix A

Data Cabling Techniques 41
10BASE-T 41
UTP Wiring Specifications 41
10BASE-T Point-to-Point Cabling 42
10BASE-FL/FOIRL Ethernet 45
10BASE2 (Thin) Ethernet 45
10BASE5 (Thick) Ethernet 46
AUI Drop Cables 46

Appendix B

Glossary 47

Appendix C

Technical Support Fax Order 53
Incident Summary 53

Appendix D

AT-3624TS/AT-3624TRS Manual Feedback 55

Appendix E

Where To Find Us 57

Appendix F

Index 59

List of Figures

Figure 1: AT-3624TS Front and Back Panels 2
Figure 2: AT-3624TS Front and Back Panels 4
Figure 3: AT-3624TRS Front and Back Panels 5
Figure 4: Populated 8-Slot Chassis 5
Figure 5: Removing the Interrepeater Bus Dust Cover 9
Figure 6: Removing Rubber Feet from Module 9
Figure 7: Attaching Chassis Guides 10
Figure 8: AUI Network Port 11
Figure 9: Hub Status LEDs 13
Figure 10: AT-3624TS Front and Back Panels 15
Figure 11: AUI Network Port 17
Figure 12: 50-Pin Telco Receptacle (RJ21) 18
Figure 13: Harmonica Adapter for AT-3624TS 19
Figure 14: AT-3624TS Repeater Port LEDs 23
Figure 15: AT-3624TRS Front and Back Panels 29
Figure 16: AUI Network Port 31
Figure 17: AT-3624TRS Port LEDs 33
Figure 18: 10BASE-T UTP Cabling Hub-to-MAU (Straight-Through) 42
Figure 19: Pin 1 Orientation on an RJ45 Connector 43
Figure 20: 10BASE-T UTP Cabling Hub-to-Hub or MAU-to-MAU (Crossover) 43
Figure 21: Hub-to-MAU Wiring Usable (Diagram A) and Unusable (Diagram B) 44
Figure 22: Hub-to-Hub or MAU-to-MAU Wiring 45

List of Tables

Table 1: AT-3624TS and AT-3624TRS Features 2
Table 2: ATI Micro Transceivers 12
Table 3: AT-3624TS Features 16
Table 4: ATI Micro Transceivers 18
Table 5: 50-Pin Telco Pin-Out for the AT-3624TS Repeater 20
Table 6: AT-3624TRS Features 30
Table 7: ATI Micro Transceiver Choices 32
Table 8: UTP Wiring Specifications 42

Chapter 1
Overview

This manual describes the hardware features and installation procedures for Allied Telesyn International (ATI)'s set of "Slave" modules that are not manageable as standalone devices. These devices include the AT-3624TS and AT-3624TRS models. For information on the software installation and network management aspects of AT-3600 Series hubs, see the separate *CentreCOM 3600 Series and AT-S4 Firmware Module Network Operations Manual*.

CentreCOM AT-3624TS and AT-3624TRS Hubs

CentreCOM AT-3624TS and AT-3624TRS are multiple port hubs designed to offer maximum flexibility for both workgroup and department needs. These hubs can operate as non-managed hubs or are manageable in an ATI department concentrator chassis.

Note

This manual refers to two or more chassis-mounted hubs, at least one of which is manageable, as a *department concentrator*. The term *hub* refers to either a standalone hub (i.e., a single manageable repeater) or a department concentrator configuration.

AT-3600 Series Slave hubs are based on an Application-Specific Integrated Circuit (ASIC) ATI developed for maximum functionality and reliability. Figure 1 shows a sample AT-3600 Series Slave hub, in this case an AT-3624TS model.

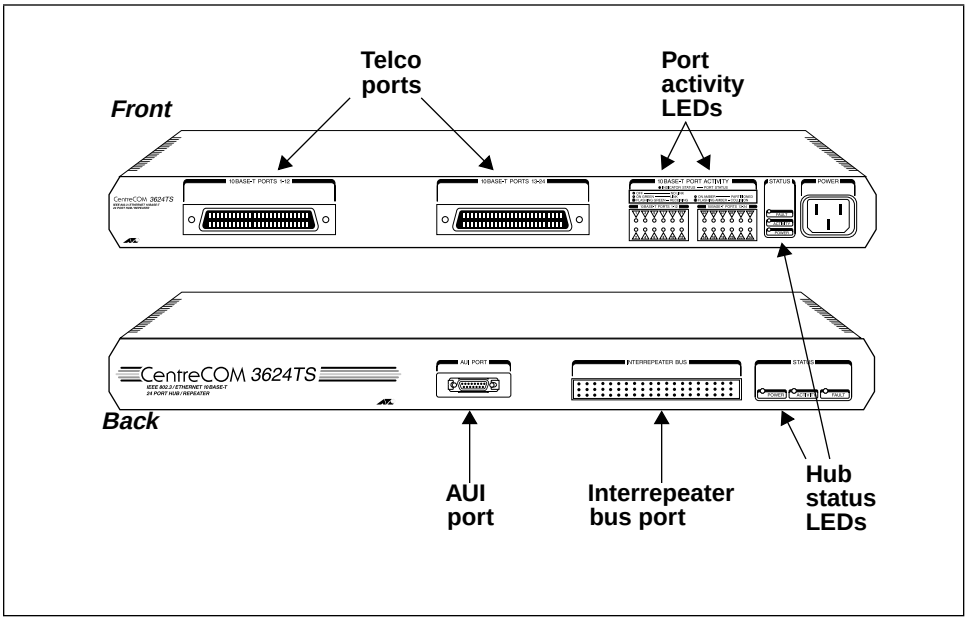

Figure 1: AT-3624TS Front and Back Panels

The AT-3624TS uses two 50-pin Telco connectors. Using an AT-ADAPT-2 or an octopus cable to the AT-3624TS also enables the use of RJ45 connectors.

Features

Table 1 summarizes the features of the AT-3624TS and AT-3624TRS hubs. Specifically, this table calls out the model number, port count, and media/connector type for each Slave hub.

Table 1: AT-3624TS and AT-3624TRS Features

Model Number	Port Count	Media/Connector Type	Power Cord
AT-3624TS-15	24	50-Pin Telco Connectors	U.S.A. Power Cord
AT-3624TS-25	24	50-Pin Telco Connectors	Without Power Cord
AT-3624TRS-15	24	RJ45 Connectors	U.S.A. Power Cord
AT-3624TRS-25	24	RJ45 Connectors	Without Power Cord

The hubs are IEEE 802.3 compliant and Ethernet compatible. When used in conjunction with an AT-3600 Master in a department concentrator chassis, the AT-3624TS and AT-3624TRS support ATI's Omega Agent, Simple Network Management Protocol (SNMP), the second version of the Management Information Base (MIB-II) and Hub MIB.

For the Slave hubs to be manageable, another hub must perform as a Master in the chassis. Hubs in the AT-3600 Series that can function as a Master are the AT-3606F, the AT-3606F/SMA, the AT-3606F/SM, the AT-3606F/SC, the AT-3606F/ST, the AT-3608, the AT-3612T, the AT-3612TR, the AT-3624T, and the AT-3624TR.

Each manageable AT-3600 Series hub is a single building block for both standalone (repeater) and chassis (department concentrator) configurations. ATI supplies desktop and rackmount department concentrator chassis that can hold up to eight AT-3600 Series hubs. Since the department concentrator chassis connects hub modules across a backplane, a fully populated department concentrator behaves as a single hub in the network topology. This enables you to build and reconfigure networks easily, efficiently and at minimum expense.

AT-3624TS and AT-3624TRS hubs include the following features:

- Comprehensive network-management-agent capabilities, including Simple Network Management Protocol (SNMP), when configured with a Master in a department concentrator.
- Proprietary Application Specific Integrated Circuits (ASICs) that provide repeating and network analog interface for Unshielded Twisted Pair (UTP).
- 24 10BASE-T ports using 24 RJ45 connectors (front panel) on the AT-3624TRS.
- 24 10BASE-T ports using two 50-pin Telco connectors (front panel) on the AT-3624TS.
- One Attachment Unit Interface (AUI) port (back panel).
- One backplane connector containing an interrepeater bus.
- An internal universal power supply.
- Advanced IEEE 802.3/Ethernet hub functionality.
- Diagnostic light-emitting diode (LED) support.
- Capability to connect to a network backbone through a transceiver.

Configurations

Commonly called *Slave* hubs because of their dependence on a *Master* hub for management, the AT-3624TS and AT-3624TRS hubs can function in any of the following three configurations:

- As a standalone hub: A *standalone* hub performs simple regeneration and retiming tasks in a variety of network configurations.
- As a hub module in an ATI 3600 series chassis: When installed in an ATI *3600 series chassis* up to eight modules can collectively act as a single logical hub without a Master.
- As a managed module with a Master in a chassis: For the AT-3624TS or AT-3624TRS to be managed, it must be included in a department concentrator with a Master. The hub modules are linked to the Master through interrepeater bus ports connected with a standard chassis backplane. This is a *managed module* configuration.

There are desktop and rackmount department concentrator chassis available to hold from two to eight AT-3600 series hubs. Since the department concentrator chassis connects hub modules across a backplane, a fully populated department concentrator behaves as a single hub in the network topology.

Both the AT-3624TS and the AT-3624TRS repeat 10BASE-T signals according to IEEE 802.3 hub specifications. Both the AT-3624TS and the AT-3624TRS repeat 10BASE-T signals according to IEEE 802.3 hub specifications. In an eight-slot department concentrator chassis like the one shown in Figure 4, up to 181 ports may be monitored (seven Slaves containing 24 10BASE-T station ports each and one Master containing 12 10BASE-T station ports and one AUI network port).

Note

The AUI network ports on the seven Slaves in an eight-slot department concentrator cannot be used because they reside on the back panel of the hub and are, therefore, blocked by the backplane.

You can expand the number of ports by stacking multiple AT-3624TS and AT-3624TRS hubs through the backplane connector, making a single logical hub.

Controllers

Both the AT-3624TS and AT-3624TRS hubs use an ATI proprietary multiple port hub controller to retime and regenerate signals and communicate with the network management software. The port status for each of the ports is indicated by an LED display.

Connectivity

The AT-3624TS and AT-3624TRS hubs have multiple ports, each with different connectors to provide flexibility.

- The AT-3624TS has two 50-pin Telco connectors for Unshielded Twisted Pair (UTP), as shown in Figure 2.

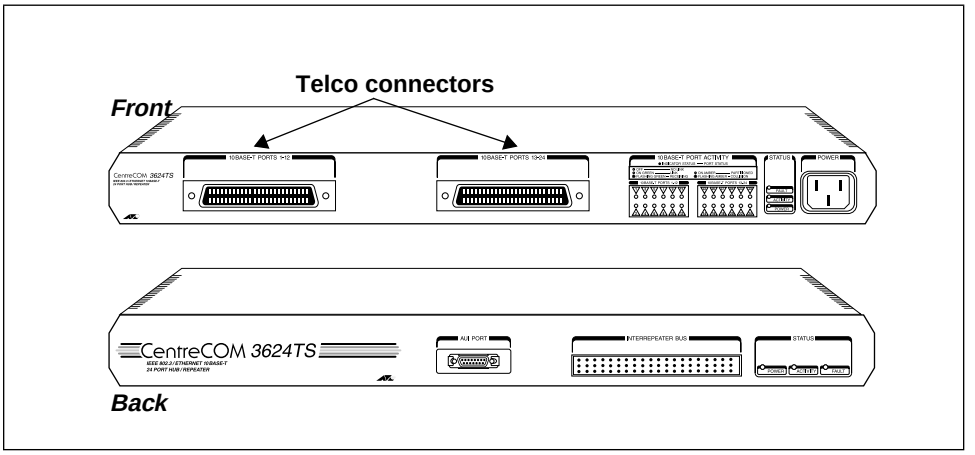

Figure 2: AT-3624TS Front and Back Panels

- The AT-3624TRS has 24 RJ45 connectors for UTP, as shown in Figure 3.

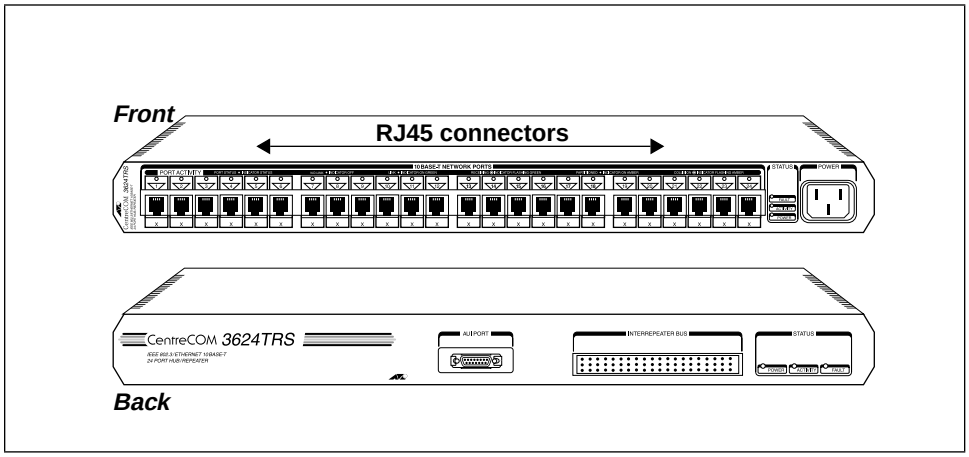

Figure 3: AT-3624TRS Front and Back Panels

Chassis Arrangements

An individual AT-3624TS or AT-3624TRS hub can be mixed and matched with other AT-3600 Series hubs for a managed or non-managed department concentrator. Various chassis models are available for desktop or rackmount configurations. These include 1-, 2-, 3-, 4-, 7-, and 8-module combinations for desktop or 19-inch rackmount installations with standard or segmented backplanes. Call your ATI sales representative for details.

You can configure up to eight AT-3600 Series hubs in a rackmount model. When fully populated with an ATI Master and any combination of connected AT-3624TS or AT-3624TRS hubs, this chassis creates a single department concentrator, as shown in Figure 4.

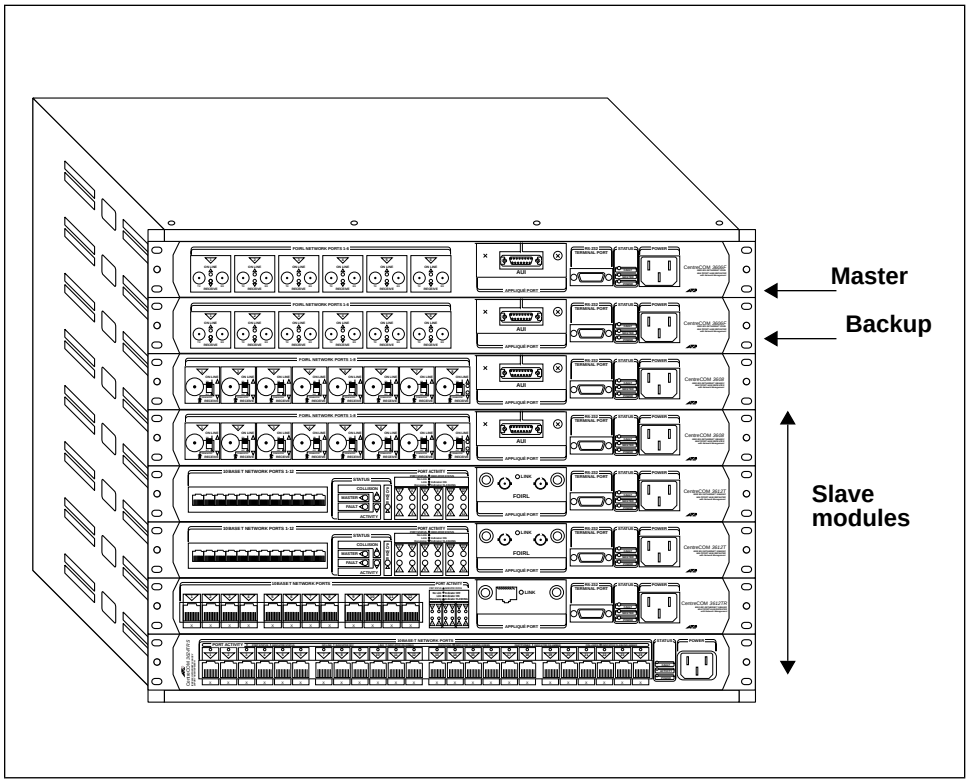

Figure 4: Populated 8-Slot Chassis

In the example above, the top slot is an AT-3606F Master, while the second slot from the top contains an AT-3612T Backup. If the AT-3606F Master should fail, the AT-3612T would take over as the Master. The remaining slots are occupied by AT-3624TRS modules, acting as managed Slaves.

Note

Not all slots have to be populated, and populated slots do not have to be contiguous. The Master is the top-most module. Any Slave above the Master will not be managed.

Further Information

For further information on Omega and AT-S4 capabilities and installation, see *CentreCOM 3600 Series and AT-S4 Firmware Module Network Operations Manual.*

Chapter 2

Hardware Installation

Installing the AT-3624TS and the AT-3624TRS simply involves plugging the hub into a power source. Additional specific information on installing the hub in a department concentrator chassis is in the manual included with the chassis.

Site Preparation

Attention

Before installing your ATI hub, read the safety installation requirements starting on page i.

Location

Both fiber hubs can operate as standalone devices or installed in a 19-inch rackmount or desktop chassis. Multiple hubs can be combined in an ATI chassis.

Ventilation

The site must have adequate ventilation to provide an operating environment consistent with the AT-3624TS and AT-3624TRS specifications. The ventilation openings located on the sides of the chassis should never be blocked. These hubs have internal fans to aid in cooling.

Attention

Maximum ambient temperature is 40^{o} C with a department concentrator chassis.

Power

Power connections for each hub should be able to provide 50 watts at 120 VAC for U.S.A. versions, and 100-120/200-240 VAC, 50/60Hz for international versions. It is customary to use dedicated power circuits or power conditioners to supply power to the network devices. This aids in isolating the network equipment from electrical power “noise.”

Installing Hubs

This section contains two separate procedures for installing AT-3600 Series slave modules:

- Standalone installation.
- Installation in a managed hub configuration in a concentrator chassis.

Installing a standalone hub

The following procedure details how to install an AT-3600 Series hub in a standalone configuration:

1. Plug one end of the power cord into the hub's power receptacle and the other end into a power outlet.
2. Check to see that the Power indicator illuminates and performs a self-test.
3. Plug your data cables into the hub and the network device.

   The Link indicator for each connected port will illuminate.

   If one or more of the ports are transferring data, the Receive and Activity indicators will illuminate.

The AT-3624TS or AT-3624TRS is now ready to serve as a non-managed hub.

Installing a slave module in a four- or eight-slot managed hub configuration

Attention

Improper installation of the chassis can expose personnel to high voltages, risking the possibility of injury or death.

Attention

Improper installation in a chassis may expose the hubs to debris and block vents, causing damage because of insufficient cooling.

Attention

When installing multiple ATI hubs in a chassis with power, setting the chassis voltage switch too high (at 240V when 120V is required) will cause overheating of the fans. Setting the voltage too low (at 120V when 240V is required) will reduce the effectiveness of the fans and thus cause overheating of the installed hub modules. Check the specific chassis model to determine the correct voltage setting.

The following procedure details how to install an AT-3600 Series slave module in a managed hub configuration in a concentrator chassis:

1. Check to be sure another module is already functioning as the Master unit in the chassis.

2. Remove the interrepeater bus dust cover from the back of any newly shipped AT-3600 slave module before installing it in a multi-module chassis. The interrepeater bus port is located on the back panel of every AT-3600 module. See Figure 5.

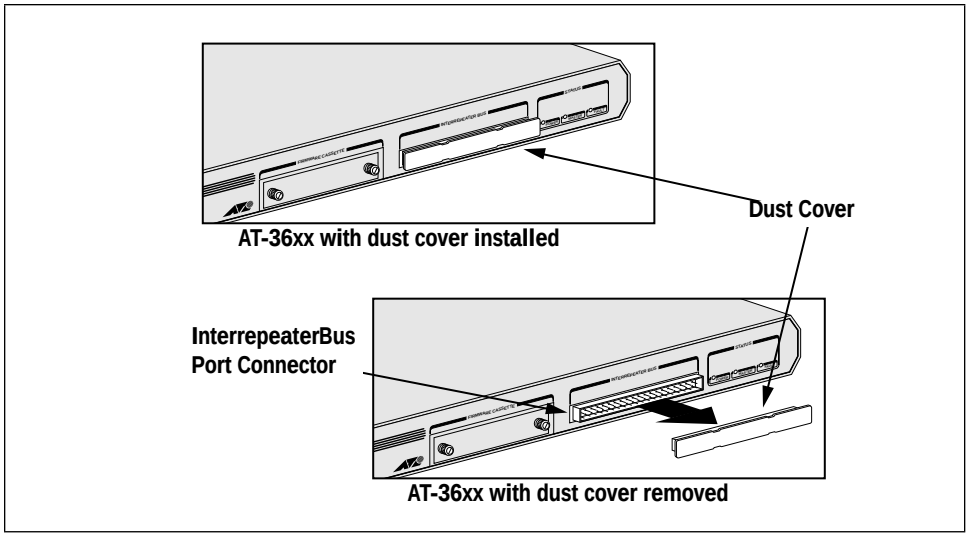

Figure 5: Removing the Interrepeater Bus Dust Cover

3. Remove the rubber feet from the bottom of any newly shipped AT-3600 Series module before installing it in a multi-module chassis. See Figure 6.

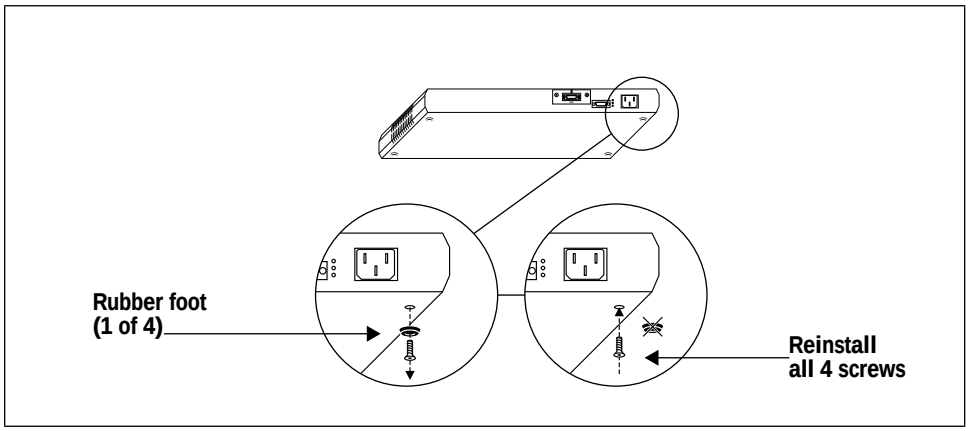

Figure 6: Removing Rubber Feet from Module

4. Reinstall the screws, after removing the rubber feet, to prevent the module casing from expanding and warping.

5. Attach the chassis guide/handle assembly to each side of the module, using the screws provided with the chassis. See Figure 7.

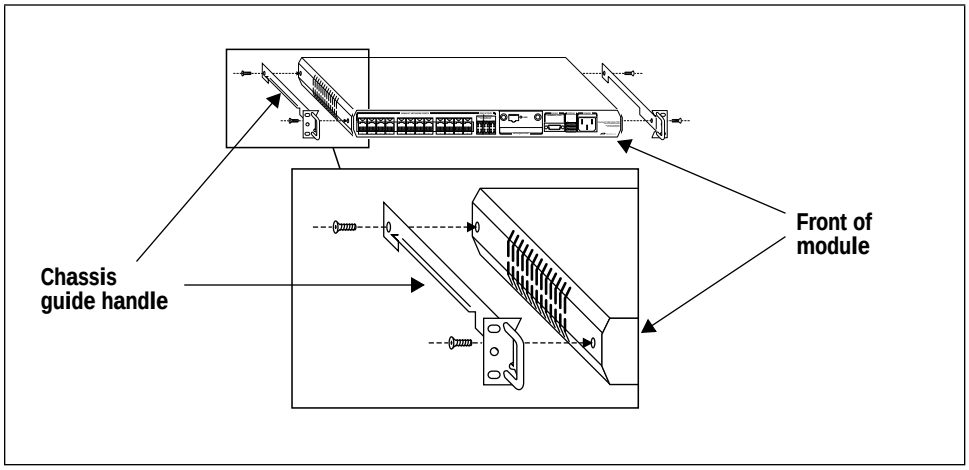

Figure 7: Attaching Chassis Guides

Attention

Figure 7 shows a sample guide assembly only; some chassis models use a different type of guide assembly.

6. Make sure the chassis guide handles are aligned with the front (i.e., connector side) of the module, as shown in Figure 7.
7. If necessary, remove the blank faceplate/air-dam assembly from the slot in which you will be installing the module.
8. Align the guide rails on either side of the module with the grooves in the chassis slot.
9. Slide the module along the chassis guide in the chassis, but do not seat it in the chassis backplane connector.
10. Plug in the newly installed module's power cord.
11. Check to see that the Power indicator illuminates.
12. Seat the module carefully and firmly in the chassis backplane.

Attention

When using the hot swapping method to insert or remove hub modules, you must be sure that the power cord on each unit is plugged in. To enable hot swapping, you must disconnect the module from the backplane before you unplug the power cord.

13. Attach the module to the chassis, using the screws provided with the chassis.
14. Connect your data cables to the hub and the network.
15. Check the Link indicators.

    If one or more of the ports on the module are transferring data, the Activity and Receive indicators will illuminate.

The AT-3600 Series slave module is now active in the chassis as a component of a network concentrator.

For confirmation, you can obtain hub and port status information via network management. To enable management from a PC monitor, the PC must be connected to the Master unit through the Master's RS232 port.

Attention

Upon initial power-up, the LEDs (including the red Fault lights) on all units connected through a chassis backplane will activate. This is a normal cycling function and is not any indication of a problem.

Attention

If you need to reinstall or update the network management software in a hub module, refer to the *CentreCOM 3600 Series and AT-S4 Firmware Module Network Operations Guide.*

Port Configurations

Network Ports

AT-3600 Series slave models feature a variety of port counts and support a variety of media, including:

- ❑ Fiber optic (FOIRL, 10BASE-FL), using ST connectors.
- ❑ Fiber optic (FOIRL, 10BASE-FL), using SMA connectors.
- ❑ Thinnet (10BASE2), using BNC connectors.
- ❑ UTP/STP (10BASE-T), using Telco RJ21 or RJ45 connectors.
- ❑ Thick Ethernet (10BASE5), using the AUI connector.

AUI Port

Manageable AT-3600 Series slave modules have a fixed AUI port, illustrated in Figure 8. The AUI port is located on the back panels of the AT-3624TS and AT-3624TRS modules and on the front panels of hub modules with management capability.

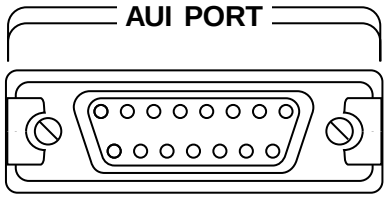

Figure 8: AUI Network Port

In a standalone configuration, you may use this port to connect the hub to the network. In a managed hub, the Master's AUI port may be used for the network connection. In a non-managed hub configuration, if you are using a two- or three-slot chassis, one AUI port is used for the network connection and the remaining AUI port(s) may be used for station connections. Table 2 shows the ATI micro-transceivers available for this purpose.

Table 2: ATI Micro Transceivers

Model	Description
AT-MX25F *or* AT-MX50F/SM	Fiber Optic (10BASE-FL), SMA Connector
AT-MX26F *or* AT-MX40F/ST	Fiber Optic (10BASE-FL), ST Connector
AT-MX55F/SC	Fiber Optic (10BASE-FL), SC Connector
AT-210T *or* AT-210TS *or* AT-MX20T	UTP (10BASE-T)
AT-MX10 *or* AT-MX10S	Thin Ethernet (10BASE2)

Station Ports

For wiring flexibility, ATI offers 10BASE-T hubs with both individual port connectors and composite connectors for 25-pair cable. The AT-3624TRS has 24 shielded RJ45 connectors for UTP cable. The AT-3624TS has two 50-pin Telco (RJ21) connectors. Chapter 3 and Chapter 4 in this manual provide more detailed information about each model's station ports.

Back Panel Features

The AT-3624TS and AT-3624TRS have the same back panel layout and features, including:

- Interrepeater bus connector that attaches the AT-3600 module to the backplane bus in a concentrator chassis.
- Status indicators providing information on the hub as a whole; for convenience, these LEDs appear on both the front and back panels.
- AUI port.

LED Displays

AT-3600 Series slave modules have two types of LED displays:

- Hub status indicators show the overall condition of the module.
- Port indicators show the condition of each port connection. They vary with module type; later chapters of this manual give specifics.

Hub Status Indicators

The LEDs shown in Figure 9 appear on the back panel of each AT-3600 Series slave.

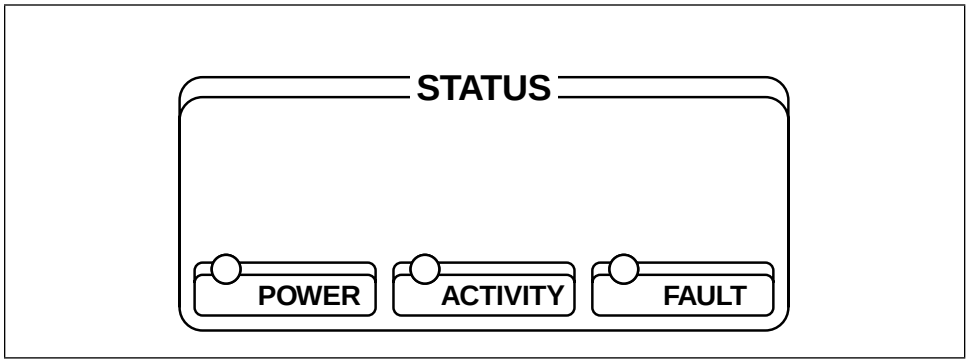

Figure 9: Hub Status LEDs

POWER—Green whenever power is applied.

FAULT—(OFF under normal operational conditions):

- Stays red for a very short time while power-on/reset diagnostics are run; remains continually red if a malfunction occurs during the diagnostics.
- Turns red (on a Master only) if the Master fails; if the Backup detects a failure of the Master, the Backup takes over the Master function.

ACTIVITY— The Activity indicator will flash when Ethernet packets are being transmitted to all repeater ports.

Port Status Indicators

The AT-3624TS and AT-3624TRS hub and port indicators on the hubs' front panels provide visual diagnostic and activity information for network analysis. A detailed description of the LED displays specific to each module is provided in Chapter 3 and Chapter 4 of this manual.

Chapter 3

AT-3624TS Connectivity

The CentreCOM AT-3624TS is a multiport repeater designed to offer maximum flexibility for both workgroup and department needs. Specifically, the AT-3624TS uses two 50-pin Telco connectors. In addition, you can connect an AT-ADAPT-2, or an octopus cable, to the AT-3624TS, enabling you to use RJ45 connectors.

Note

This manual refers to two or more chassis-mounted repeaters, at least one of which is manageable, as a *department concentrator*. The term *hub* refers to either a standalone repeater (i.e., a single manageable repeater) or a department concentrator configuration.

The AT-3624TS repeater is based on an Application-Specific Integrated Circuit (ASIC) developed by ATI for maximum functionality and reliability. Figure 10 shows the front and back panels of the AT-3624TS model repeater.

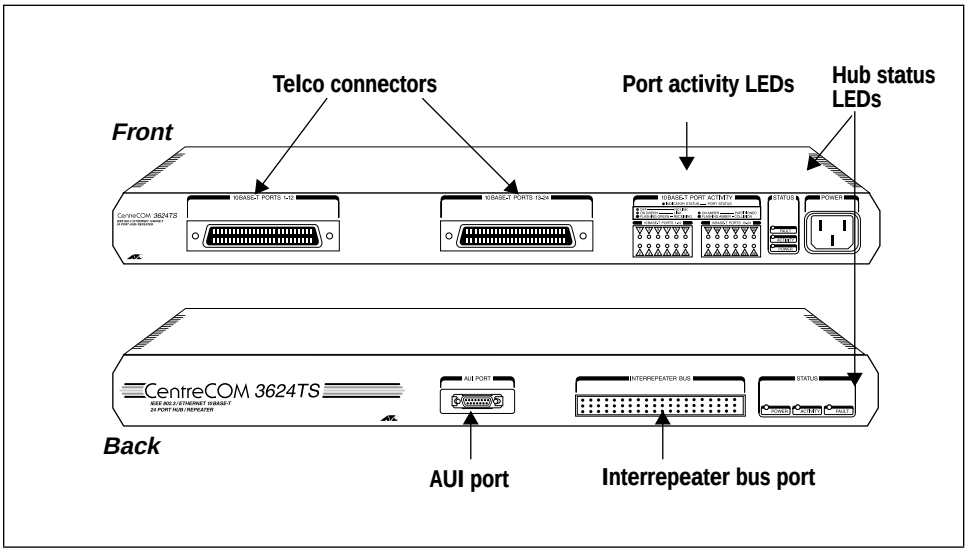

Figure 10: AT-3624TS Front and Back Panels

Since the AT-3624TS model does not incorporate management agent software, it can operate only as part of a non-managed hub or as a Slave module in an ATI department concentrator chassis.

Features

Table 3 summarizes the features of the AT-3624TS repeater, including model number, port count, and media/connector type.

Table 3: AT-3624TS Features

Model Number	Port Count	Media/Connector Type
AT-3624TS-15	24	50-Pin Telco Connectors
AT-3624TS-25	24	50-Pin Telco Connectors

The AT-3624TS repeater is IEEE 802.3 compliant and Ethernet compatible. When used in conjunction with an AT-3600 Master in a department concentrator chassis, the AT-3624TS can support ATI's Omega Agent, Simple Network Management Protocol (SNMP), the second version of the Management Information Base (MIB-II), and Hub MIB.

For the AT-3624TS to be manageable, another repeater must perform as a Master in the chassis. Repeaters in the AT-3600 series that can function as a Master are the AT-3606F, the AT-3606F/SMA, the AT-3606F/SC, the AT-3606F/SM, the AT-3606F/ST, the AT-3608, the AT-3612T, the AT-3612TR, the AT-3624T, and the AT-3624TR.

Each manageable AT-3600 Series Repeater is a single building block for both standalone (repeater) and chassis (department concentrator) configurations. ATI supplies desktop and rackmount department concentrator chassis that can hold up to eight AT-3600 Series Repeaters. Since the department concentrator chassis connects repeater modules across a backplane, a fully populated department concentrator behaves as a single repeater in the network topology. This enables you to build and reconfigure networks easily, efficiently and at minimum expense.

Configurations

The AT-3624TS is what is commonly called a *Slave* repeater because depends on a *Master* repeater for management. The AT-3624TS repeater can function in any of the following three configurations:

- As a standalone repeater: A *standalone* repeater performs simple regeneration and retiming tasks in a variety of network configurations.
- As a hub module in an ATI 3600 series chassis: When installed in an ATI *3600 series chassis* up to eight modules can collectively act as a single logical repeater without a Master.
- As a managed module with a Master in a chassis: For the AT-3624TS to be managed, it must be included in a department concentrator with a Master. The hub modules are linked to the Master through interrepeater bus ports connected with a standard chassis backplane.

There are desktop and rackmount department concentrator chassis available to hold from two to eight AT-3600 series repeaters. Since the department concentrator chassis connects repeater modules across a backplane, a fully populated department concentrator behaves as a single repeater in the network topology.

The AT-3624TS module repeats 10BASE-T signals according to IEEE 802.3 specifications. In an eight-slot department concentrator, up to 181 ports may be monitored (seven Slaves containing 24 10BASE-T station ports each and one Master containing 12 10BASE-T station ports and one AUI network port).

Note

The AUI network ports on an installation of seven Slave hubs in an eight-slot department concentrator cannot be used because they reside on the back panel of the repeater and are blocked by the backplane.

You can expand the number of ports by stacking multiple AT-3624TS repeaters through the backplane connector, making a single logical repeater.

Controllers

The AT-3624TS module uses an ATI proprietary multi-port repeater controller to retime and regenerate signals and communicate with the network management software. The port status for each of the ports is indicated by an LED display.

AT-3624TS Port Configurations

Network Port

The AT-3624TS repeater has an AUI port, as shown in Figure 11, located on the back panel. This port may be used to connect the repeater to the network in the standalone configuration. In a managed hub, the Master's AUI port may be used for the network connection. In a non-managed hub configuration, if you are using a two- or three-slot chassis, one AUI port is used for the network connection and the remaining AUI port(s) may be used for station connections.

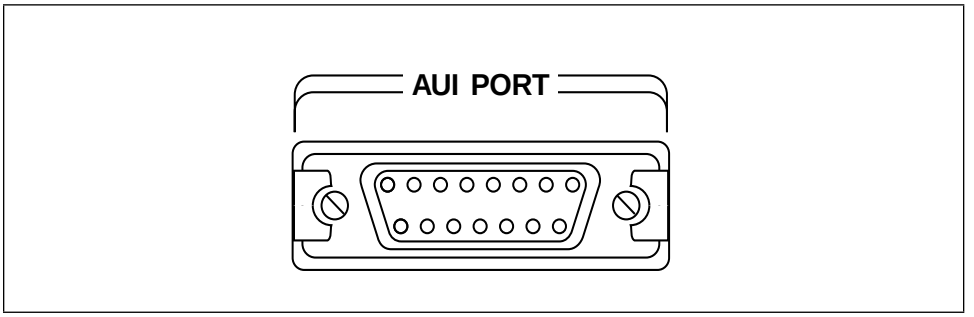

Figure 11: AUI Network Port

Table 4 shows the ATI micro transceivers available for network connections.

Table 4: ATI Micro Transceivers

Model	Description
AT-MX25F *or* AT-MX50F/SM	Fiber Optic (10BASE-FL), SMA Connector
AT-MX26F *or* AT-MX40F/ST	Fiber Optic (10BASE-FL), ST Connector
AT-MX55F/SC	Fiber Optic (10BASE-FL), SC Connector
AT-210T *or* AT-210TS *or* AT-MX20T	UTP (10BASE-T)
AT-MX10 *or* AT-MX10S	Thin Ethernet (10BASE2)

Station Ports

For wiring flexibility, ATI offers 10BASE-T repeaters with both individual port connectors and composite connectors for 25-pair cable. The AT-3624TS has two 50-pin Telco (RJ21) connectors.

50-Pin Telco Receptacle (For Model AT-3624TS). The 50-pin Telco receptacle on the AT-3624TS repeaters is shown in Figure 12.

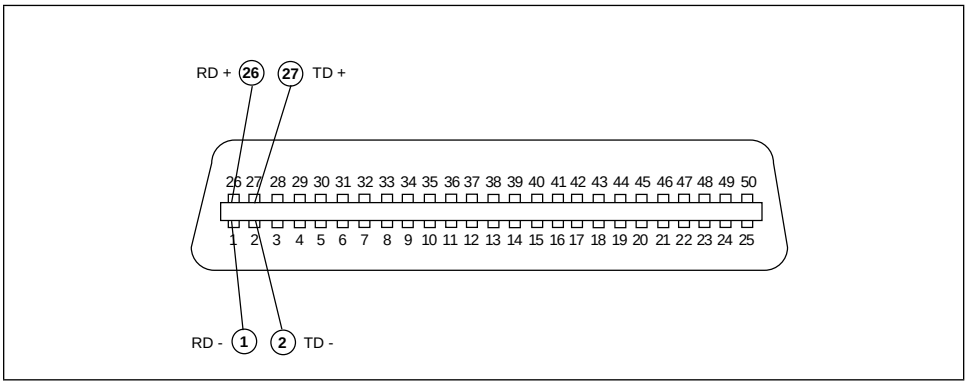

Figure 12: 50-Pin Telco Receptacle (RJ21)

50-Pin Telco-to-RJ45 Octopus Cables (For Model AT-3624TS). he 10BASE-T octopus cable breaks out the AT-3624TS hub 50-pin Telco connector to individual RJ45 connectors for connecting directly into a patch panel in the wiring closet. When purchasing an octopus cable, make sure that it is wired for 10BASE-T.

50-Pin Telco-to-RJ45 Harmonica (For Model AT-3624TS). ATI offers a harmonica adapter, model AT-ADAPT-2. The harmonica-style adapter for the AT-3624TS, shown below, allows direct conversion from the 50-pin Telco-to-RJ45 receptacles. Since there are many different standards for the pin-out of the harmonica adapter, make sure that the pin-out of the adapter you use complies with the 10BASE-T wiring specification. Refer to Table 5 for the pin-out of the Telco connectors for the AT-3624TS repeater when ordering 10BASE-T harmonica adapters from your wiring vendor, or order model AT-ADAPT-2 from your ATI representative. Figure 13 shows the harmonica-style adapter.

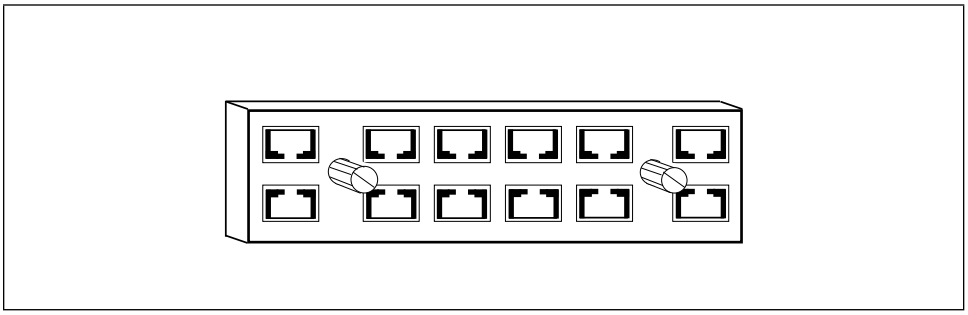

Figure 13: Harmonica Adapter for AT-3624TS

50-Pin Telco-to-Punch-Down Block (For Model AT-3624TS). Connecting the AT-3624TS directly to a punch-down block may be accomplished with a Telco-connector-to-25-pair-UTP-cable bundle. Refer to Table 5 for the direct wiring pin-out. Adapter patch panels have a built in punch-down block for maximum flexibility. Patch panels allow for easy configuration and reconfiguration of house wiring requirements.

Table 5: 50-Pin Telco Pin-Out for the AT-3624TS Repeater

50-Pin Connector Pin Number	Punch-Down Block Pin Number	Cable Color Code[1]	Link Designation	Hub	8-Pin Modular Jack Pin Numbers
26	1	W-BL	1	RCV POS	1
1	2	BL-W	1	RCV NEG	2
27	3	W-OR	1	XMT POS	3
2	4	OR-W	1	XMT NEG	6
28	5	W-GR	2	RCV POS	1
3	6	GR-W	2	RCV NEG	2
29	7	W-BR	2	XMT POS	3
4	8	BR-W	2	XMT NEG	6
30	9	W0SL	3	RCV POS	1
5	10	SL-W	3	RCV NEG	2
31	11	R-BL	3	XMT POS	3
6	12	BL-R	3	XMT NEG	6
32	13	R-OR	4	RCV POS	1
7	14	OR-R	4	RCV NEG	2
33	15	R-GR	4	XMT POS	3
8	16	GR-R	4	XMT NEG	6
34	17	R-BR	5	RCV POS	1
9	18	BR-R	5	RCV NEG	2
35	19	R-SL	5	XMT POS	3
10	20	SL-R	5	XMT NEG	6
36	21	BK-BL	6	RCV POS	1
11	22	BL-BK	6	RCV NEG	2
37	23	BK-OR	6	XMT POS	3
12	24	OR-BK	6	XMT NEG	6
38	25	BK-GR	7	RCV POS	1
13	26	GR-BK	7	RCV NEG	2
39	27	BK-BR	7	XMT POS	3
14	28	BR-BK	7	XMT NEG	6

NOTE 1. Cable colors may be different from those represented here depending on the cable manufacturer.

Table 5: 50-Pin Telco Pin-Out for the AT-3624TS Repeater (Continued)

50-Pin Connector Pin Number	Punch-Down Block Pin Number	Cable Color Code[1]	Link Designation	Hub	8-Pin Modular Jack Pin Numbers
40	29	BK-SL	8	RCV POS	1
15	30	SL-BK	8	RCV NEG	2
41	31	Y-BL	8	XMT POS	3
16	32	BL-Y	8	XMT NEG	6
42	33	Y-OR	9	RCV POS	1
17	34	OR-Y	9	RCV NEG	2
43	35	Y-GR	9	XMT POS	3
18	36	GR-Y	9	XMT NEG	6
44	37	Y-BR	10	RCV POS	1
19	38	BR-Y	10	RCV NEG	2
45	39	Y-SL	10	XMT POS	3
20	40	SL-Y	10	XMT NEG	6
46	41	V-BL	11	RCV POS	1
21	42	BL-V	11	RCV NEG	2
47	43	V-OR	11	XMT POS	3
22	44	OR-V	11	XMT NEG	6
48	45	V-GR	12	RCV POS	1
23	46	GR-V	12	RCV NEG	2
49	47	V-BR	12	XMT POS	3
24	48	BR-V	12	XMT NEG	6
50	49	V-SL	—	reserved	—
25	50	SL-V	—	reserved	—

NOTE 1. Cable colors may be different from those represented here depending on the cable manufacturer.

UTP Hub-to-MAU Wiring

For a 10BASE-T link between a hub and a Media Access Unit (MAU) transceiver or Network Interface Controller (NIC), the cable is wired straight-through. That is, an RJ45 receptacle at the hub would wire pin-to-pin to the RJ45 receptacle at the MAU. The AT-3624TS follows IEEE's 10BASE-T hub standard for an embedded cross-over function. Each port is an MDI-X interface with the receive and transmit pairs crossed internally.

Note

For information on UTP cabling, refer to the 10BASE-T section in Appendix A.

LED Displays

Hub Indicators

LED indicators appear on each AT-3624TS repeater. The LEDs intentionally do not reflect real-time activity, because a data packet is too fast for the human eye to distinguish on the LED indicator; therefore, the hub artificially stretches the LED ON time for observation. LED indicators for the AT-3624TS repeater are described below:

POWER—Green whenever power is applied.

FAULT (OFF under normal operational conditions)—Stays red for a very short time while power-ON/reset diagnostics are run; remains solid red if a malfunction is detected during the diagnostics.

ACTIVITY—The Activity indicator will flash when Ethernet packets are being transmitted to all repeater ports.

Port Indicators

The AT-3624TS port indicators are located on the repeaters' front panel. They provide visual diagnostic and activity information for network analysis. Each 10BASE-T port supports the following indicator functions with one two-color front panel LED per port:

LINK (Solid Green)—This indicates that the particular port has a valid link and is not partitioned.

RECEIVING (Flashing Green)—When a port's LED is blinking, the port is receiving Ethernet packets.

PARTITIONED (Solid Amber)—A solid amber port indicator means the port is partitioned or segmented from the rest of the ports. This may occur by a management function or by an error condition on the link.

COLLISION (Flashing Amber)—A momentary amber flash occurs when a collision is detected on the port.

NO LINK (No Light)—If the link test function is not met by the 10BASE-T device at the opposite end of the UTP segment, this LED will not illuminate. This may occur if the workstation at the end of the segment is turned OFF or if the UTP segment is disrupted or damaged.

SELF-TEST (Sequential Flashing Green)—This indicates the repeater is conducting a power-ON self-test. The test continues until one port is connected (valid link).

Figure 14 shows the port LEDs for the AT-3624TS.

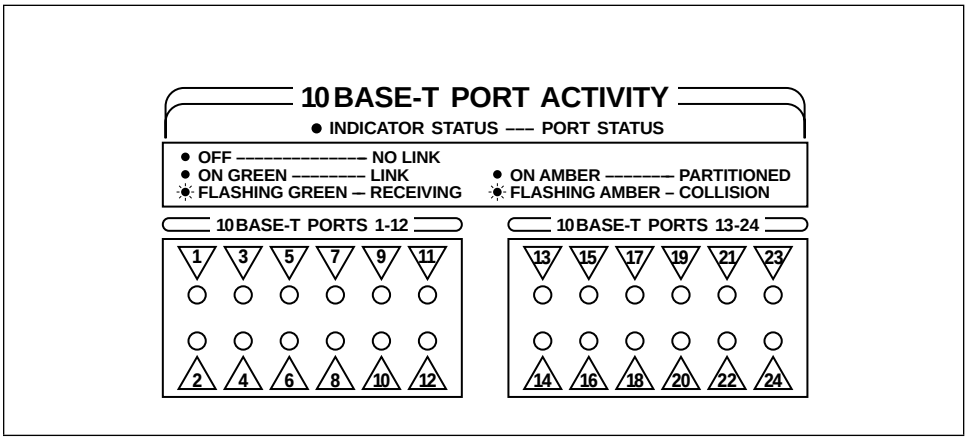
10BASE-T PORT ACTIVITY
INDICATOR STATUS --- PORT STATUS
OFF ---------- NO LINK
ON GREEN ---------- LINK
FLASHING GREEN -- RECEIVING
ON AMBER ---------- PARTITIONED
FLASHING AMBER -- COLLISION
10BASE-T PORTS 1-12
10BASE-T PORTS 13-24
1 3 5 7 9 11
2 4 6 8 10 12
13 15 17 19 21 23
14 16 18 20 22 24

Figure 14: AT-3624TS Repeater Port LEDs

Back Panel Features

The AT-3624TS has the following back panel layout and features:

- Interrepeater bus connector that attaches the AT-3600 module to the backplane bus in a concentrator chassis.
- Status indicators providing information on the hub as a whole; for convenience, these LEDs appear on both the front and back panels.
- AUI port.

Sample Installations of the AT-3624TS Module

This section contains three separate procedures that detail sample installations of the AT-3624TS. They are:

- Installing the Slave standalone.
- Installing the Slave in a non-managed hub configuration in a two-slot rackmount chassis.
- Installing the Slave in a managed hub configuration in a four-slot rackmount chassis.

Warning

Improper installation of the chassis can expose personnel to high voltages, risking the possibility of injury or death.

Caution

Improper installation can expose the module to debris and block vents, causing damage due to insufficient cooling.

Installing the AT-3624TS as a standalone device

The following procedure details how to install an AT-3624TS in a standalone configuration.

1. Plug one end of the power cord into the repeater and the other end into your power outlet.
2. Check to see that the Power indicator illuminates.
3. Check to see that the repeater performs a self-test, temporarily illuminating all port LEDs in sequence, beginning with port 1 and continuing with port 2, port 3 and so forth. The self-test recurs until a port is connected.
4. Plug your data cables into the hub and the network.

   The Link indicator for each connected port will illuminate.

   If one or more of the ports are transferring data, the Activity indicator will illuminate.

The AT-3624TS slave is now ready to serve as a non-managed standalone device.

Installing the AT-3624TS in a non-managed hub configuration

The following procedure details how to install a sample rackmount configuration in a non-managed hub configuration. This example is based on the following assumptions:

- ❑ You are working with a two-slot rackmount chassis
- ❑ You will populate both slots in the chassis
- ❑ You will be working with two Slaves (NO Master or Backup)

1. Remove the interrepeater bus dust cover on the back panel of the module before installing the unit in a rackmount chassis.
2. Remove the rubber feet from the Slaves.
3. Reinstall the screws once the rubber feet are off.

Note

After removing the rubber feet, it is important to reinstall the screws or the module will expand. (Also see Chapter 2, “Hardware Installation” on page 7.)

4. Attach the mounting bracket/handle assemblies to each side of the Slave you are installing.
5. Plug one end of the power cord into the Slave and the other end into your power outlet.
6. Check to see that the Power indicators on the Slave illuminates.

7. Check to see that the Slave performs a self-test.

   The Slave will temporarily illuminate all port LEDs in sequence, beginning with port 1 and continuing with port 2, port 3 and so forth. The self-test recurs until a port is connected.

8. Align the backplane connector with the interrepeater bus connector on the back panel of the Slave.
9. Insert the backplane assembly gently in place and make sure it is firmly seated.

Note

When inserting or removing a hub module, the power cord should remain plugged in. The module must be disconnected from the backplane before the power cord is unplugged. If a fault occurs (Fault light stays ON), disengage the backplane from the Slave, unplug and replug the power cord, and re-seat the backplane.

10. Plug in your data cables to the hub and the network.

    The Link indicator should illuminate for each connected port on the Slave module.

    If one or more of the ports are in use on the Slave module, the Activity indicator will illuminate.

Your AT-3624TS repeater is now active in the chassis, serving as a non-managed hub.

Installing the AT-3624TS in a managed hub configuration

The following procedure details how to install an AT-3624TS in a managed hub configuration in a rackmount chassis. This example is based on the following assumptions:

- ❑ You are working with a four-slot rackmount chassis
- ❑ Three of the four slots in the chassis will be populated
- ❑ A Master has been installed in slot one
- ❑ A Backup has been installed in slot two
- ❑ You will install a Slave in slot three, leaving slot four empty

1. Remove the interrepeater bus dust cover on the back panel of the module before installing the unit in a rackmount chassis.
2. Remove the rubber feet from the Slaves.
3. Reinstall the screws once the rubber feet are off.

Note

After removing the rubber feet, it is important to reinstall the screws or the module will expand. (Also see Chapter 2, “Hardware Installation” on page 7.)

4. Attach the chassis guide/handle assembly, with the screws provided with the chassis, to each side of the Slave. Make sure the handles are aligned with the front of the module.
5. Remove the blank faceplate/air-dam assembly from the slot (slot three) where you will be installing the Slave.
6. Slide the Slave along the chassis guide in the rackmount chassis without seating it in the backplane connector.
7. Plug in the Slave's power cord.
8. Check to see if the Power indicator illuminates.
9. Check to see that the Slave performs a self-test.

   The Slave will temporarily illuminate all port LEDs in sequence, beginning with port 1 and continuing with port 2, port 3 and so forth. The self-test recurs until a port is connected.

10. Align the backplane connector with the interrepeater bus connector on the back panel of the Slave.
11. Seat the interrepeater bus port of the Slave carefully in the backplane.

Note

When inserting or removing hub modules, the power cord should remain plugged in (using the hot swapping method). To use the hot swapping method, the module must be disconnected from the backplane before the power cord is unplugged. If a fault occurs (Fault light stays ON), disengage the repeater module from the backplane, unplug and replug the power cord, and re-seat the module.

12. Check that the Master downloads management software after the Slave is seated in the backplane connector. During the download:

    - ❑ All LED ports illuminate
    - ❑ The fault LED illuminates
    - ❑ All port LEDs temporarily go OFF to show that download is complete

13. Attach the Slave to the rackmount chassis with standard rackmount screws (not provided).
14. Plug in your data cables to the hub and the network.
15. Check the Link indicators.

    If one or more of the ports on the Slave module is transferring data, the Activity indicator will illuminate.

16. Make sure the empty slot (slot four) is covered with its blank faceplate/ air- dam assembly.

Your AT-3624TS repeater is now active in the chassis, serving in a managed hub configuration.

To install blank faceplate/air-dam assembly

Note

Blank faceplate/air-dam assemblies are necessary to control air flow and keep the rackmount chassis cool. Chassis are shipped with the faceplate/air-dam assemblies in place. (Also see Chapter 2, “Hardware Installation” on page 7.)

1. Attach a blank faceplate/air-dam assembly to the empty slot.
2. Align the faceplate/air-dam assembly.
3. Slide the assembly along the chassis guides until the notch, on the end of the faceplate/air-dam assembly, connects into the slot at the back of the chassis.
4. Screw the faceplate/airdam asembly in place on each end with one of the supplied screws.

Chapter 4

AT-3624TRS Connectivity

The CentreCOM AT-3624TRS is a multiport hub designed to offer maximum flexibility for both workgroup and department needs. Specifically, the AT-3624TRS has 24 shielded RJ45 connectors for UTP cable. Since the AT-3624TRS model does not incorporate management agent software, it can operate only as part of a non-managed hub or as a Slave module in an ATI department concentrator chassis.

Attention

This manual refers to two or more chassis-mounted hubs, at least one of which is manageable, as a *department concentrator*. The term *hub* refers to either a standalone hub (i.e., a single manageable repeater) or a department concentrator configuration.

The AT-3624TRS is based on an Application-Specific Integrated Circuit (ASIC) ATI developed for maximum functionality and reliability. Figure 15 shows the front and back panels of the AT-3624TRS model hub.

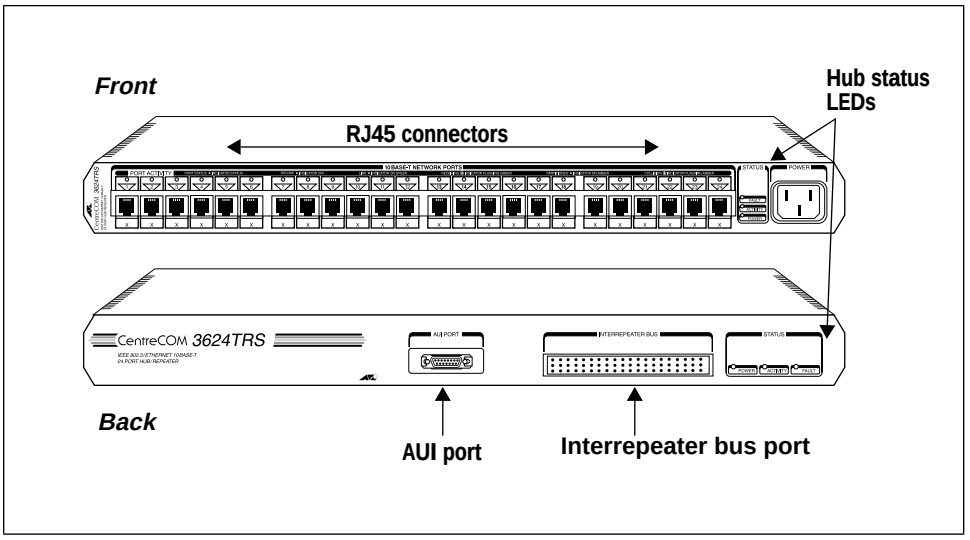

Figure 15: AT-3624TRS Front and Back Panels

As shown in the above figure, the AT-3624TRS uses 24 RJ45 connectors for UTP. Since the AT-3624TRS model does not incorporate management agent software, it can operate only as part of a non-managed hub or as a Slave module in an ATI department concentrator chassis.

Features

Table 6 summarizes the features of the AT-3624TRS hub, including model number, port count, and media/connector type for each Slave hub.

Table 6: AT-3624TRS Features

Model Number	Port Count	Media/Connector Type
AT-3624TRS-15	24	RJ45 Connectors
AT-3624TRS-25	24	RJ45 Connectors

The AT-3624TRS is IEEE 802.3 compliant and Ethernet compatible. When used in conjunction with an AT-3600 Master in a department concentrator chassis, the AT-3624TRS supports ATI's Omega Agent, Simple Network Management Protocol (SNMP), the second version of the Management Information Base (MIB-II) and Hub MIB.

For the AT-3624TRS hub to be manageable, another hub must perform as a Master in the chassis. hubs in the AT-3600 series that can function as a Master are the AT-3606F, the AT-3606F/SMA, the AT-3606F/SC, the AT-3606F/ST, the AT-3606F/SM, the AT-3608, the AT-3612T, the AT-3612TR, the AT-3624T, and the AT-3624TR.

Each manageable AT-3600 Series hub is a single building block for both standalone (hub) and chassis (department concentrator) configurations. ATI supplies desktop and rackmount department concentrator chassis that can hold up to eight AT-3600 Series hubs. Since the department concentrator chassis connects hub modules across a backplane, a fully populated department concentrator behaves as a single hub in the network topology. This enables you to build and reconfigure networks easily, efficiently and at minimum expense.

Configurations

The AT-3624TRS is what is commonly called a *Slave* hub because it depends on a *Master* hub for management, the AT-3624TRS hub can function in any of the following three configurations:

- As a standalone hub: A *standalone* hub performs simple regeneration and retiming tasks in a variety of network configurations.
- As a hub module in an ATI 3600 series chassis: When installed in an ATI *3600 series chassis* up to eight modules can collectively act as a single logical hub without a Master.
- As a managed module with a Master in a chassis: For the AT-3624TRS to be managed, it must be included in a department concentrator with a Master. This is a *managed module* configuration.

There are desktop and rackmount department concentrator chassis available to hold from two to eight AT-3600 series hubs. Since the department concentrator chassis connects hub modules across a backplane, a fully populated department concentrator behaves as a single hub in the network topology.

The AT-3624TRS repeats 10BASE-T signals according to IEEE 802.3 hub specifications. In an eight-slot department concentrator, up to 181 ports may be monitored (seven Slaves containing 24 10BASE-T station ports each and one Master containing 12 10BASE-T station ports and one AUI network port).

Attention

The AUI network ports on the seven Slaves in an eight-slot department concentrator cannot be used because they reside on the back panel of the hub and are blocked by the backplane.

You can expand the number of ports by stacking multiple AT-3624TRS hubs through the backplane connector, making a single logical hub.

Controllers

The AT-3624TRS repeater uses an ATI proprietary multiple port repeater controller to retime and regenerate signals and communicate with the network management software. The port status for each of the ports is indicated by an LED display.

AT-3624TRS Port Configurations

Network Port

The AT-3624TRS repeater has an AUI port, as shown in Figure 16, located on the back panel. This port may be used to connect the hub to the network in the standalone configuration. In a managed hub, the Master's AUI port may be used for the network connection. In a non-managed hub configuration, if you are using a two- or three-slot chassis, one AUI port is used for the network connection and the remaining AUI port(s) may be used for station connections.

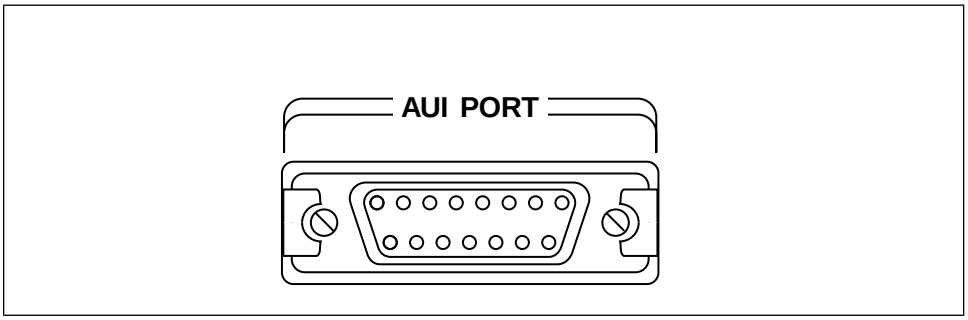

Figure 16: AUI Network Port

Table 7 shows the ATI micro transceivers available for network connections.

Table 7: ATI Micro Transceiver Choices

Model	Description
AT-MX25F *or* AT-MX50F/SM	Fiber Optic (10BASE-FL), SM Connector
AT-MX26F *or* AT-MX40F/ST	Fiber Optic (10BASE-FL), ST Connector
AT-MX55F/SC	Fiber Optic (10BASE-FL), SC Connector
AT-210T *or* AT-210TS *or* AT-MX20T	UTP (10BASE-T)
AT-MX10 *or* AT-MX10S	10BASE2 (Thin) Ethernet

Station Ports

The AT-3624TRS repeater is factory built with 24 RJ45 connectors.

UTP Hub-to-MAU Wiring

For a 10BASE-T link between a hub and a Media Access Unit (MAU) transceiver or Network Interface Controller (NIC) the cable is wired straight-through. That is, an RJ45 receptacle at the hub would wire pin-to-pin to the RJ45 receptacle at the MAU. The AT-3624TRS follows IEEE's 10BASE-T hub standard for an embedded crossover function. Each port is an MDI-X interface with the receive and transmit pairs crossed internally.

Attention

For information on UTP cabling, refer to Appendix A, "UTP Wiring Specifications" on page 41.

LED Displays

The LEDs intentionally do not reflect real-time activity on the AT-3624TRS because a data packet is too fast for the human eye to distinguish on the LED indicator; therefore, the hub artificially stretches the LED ON time for observation.

Hub Indicators

Hub LED indicators for the AT-3624TRS repeater are described below:

POWER—Green whenever power is applied.

FAULT (OFF under normal operational conditions)—Stays red for a very short time while power-ON/reset diagnostics are run; remains solid red if a malfunction is detected during the diagnostics.

ACTIVITY—The Activity indicator will flash when Ethernet packets are being transmitted to all repeater ports.

Port Indicators

The AT-3624TRS port indicators on the hubs' front panels provide visual diagnostic and activity information for network analysis. Each 10BASE-T port supports the following indicator functions with one two-color front panel LED per port:

LINK (Solid Green)—This indicates that the particular port has a valid link and is not partitioned.

RECEIVING (Flashing Green)—When a port's LED is blinking, the port is receiving Ethernet packets.

PARTITIONED (Solid Amber)—A solid amber port indicator means the port is partitioned or segmented from the rest of the ports. This may occur by a management function or by an error condition on the link.

COLLISION (Flashing Amber)—A momentary amber flash occurs when a collision is detected on the port.

NO LINK (No Light)—If the link test function is not met by the 10BASE-T device at the opposite end of the UTP segment, this LED will not illuminate. This may occur if the workstation at the end of the segment is turned OFF or if the UTP segment is disrupted or damaged.

SELF-TEST (Sequential Flashing Green)—This indicates the repeater is conducting a power-ON self-test. The test continues until one port is connected (valid link).

Figure 17 shows the port LEDs for the AT-3624TRS.

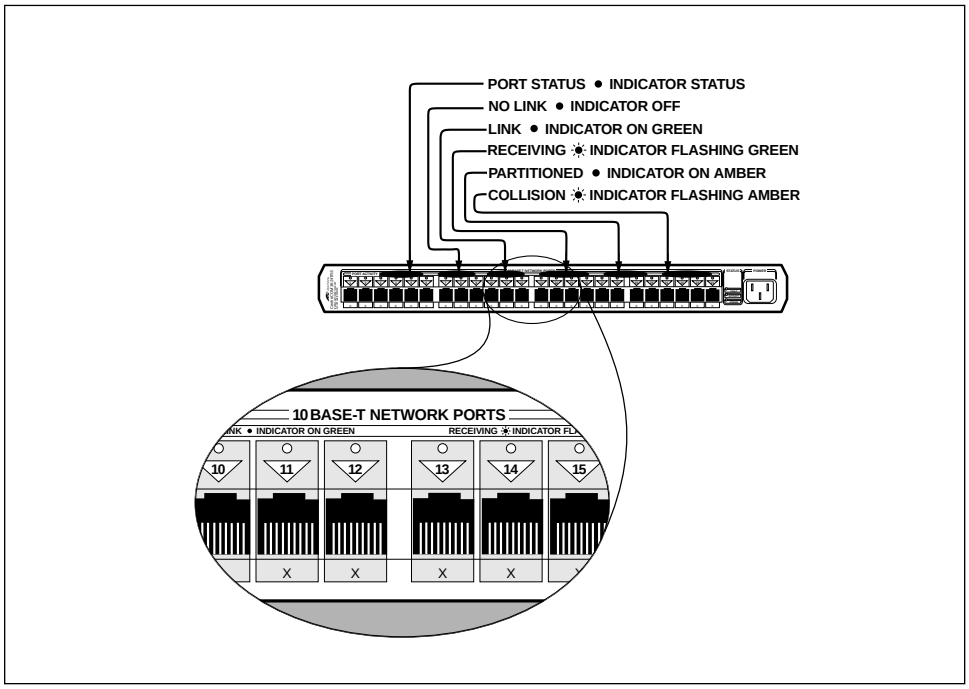

Figure 17: AT-3624TRS Port LEDs

Back Panel Features

The AT3624TRS has the following back panel layout and features:

- Interrepeater bus connector that attaches the AT-3600 module to the backplane bus in a concentrator chassis.
- Status indicators providing information on the hub as a whole; for convenience, these LEDs appear on both the front and back panels.
- AUI network port.

Sample Installations of the AT-3624TRS Module

This section contains three separate procedures that detail sample installations of the AT-3624TRS. They are:

- Installing the Slave standalone.
- Installing the Slave in a non-managed hub configuration in a two-slot rackmount chassis.

Warning

Improper installation of the chassis can expose personnel to high voltages, risking the possibility of injury or death.

Caution

Improper installation can expose the module to debris and block vents, causing damage due to insufficient cooling.

Installing the AT-3624TRS as a standalone device

The following procedure details how to install an AT-3624TRS in a standalone configuration.

1. Plug one end of the power cord into the repeater and the other end into your power outlet.
2. Check to see that the Power indicator illuminates.
3. Check to see that the repeater performs a self-test, temporarily illuminating all port LEDs in sequence, beginning with port 1 and continuing with port 2, port 3 and so forth. The self-test recurs until a port is connected.
4. Plug in your data cables to the hub and the network.

   The Link indicator for each connected ports will illuminate.

   If one or more of the ports are transferring data, the Activity indicator will illuminate.

The AT-3624TRS is now ready to serve as a non-managed standalone hub.

Installing the AT-3624TRS in a non-managed hub configuration

The following procedure details how to install a sample rackmount configuration in a non-managed chassis. This example assumes the following:

- ❑ You are working with a two-slot rackmount chassis
- ❑ You will populate both slots in the chassis
- ❑ You will be working with two Slaves (NO Master or Backup)

1. Remove the interrepeater bus dust cover on the back panel of the module before installing the unit in a rackmount chassis.
2. Remove the rubber feet from the Slaves
3. Reinstall the screws once the rubber feet are off.

Attention

After removing the rubber feet, it is important to reinstall the screws or the module will expand. (Also see Chapter 2, “Hardware Installation” on page 7.)

4. Attach the mounting bracket/handle assemblies to each side of the Slave you are installing.
5. Plug one end of the power cord into the Slave and the other end into your power outlet.
6. Check to see that the Power indicators on the Slave illuminates.
7. Check to see that the Slave performs a self-test.

   The Slave will temporarily illuminate all port LEDs in sequence, beginning with port 1 and continuing with port 2, port 3 and so forth. The self-test recurs until a port is connected.
8. Align the backplane connector with the interrepeater bus connector on the back panel of the Slave.
9. Seat the interrepeater bus port of the Slave carefully in the backplane.

Attention

When inserting or removing hub modules, the power cord should remain plugged in (using the hot swapping method). To use the hot swapping method, the module must be disconnected from the backplane before the power cord is unplugged. If a fault occurs (Fault light stays ON), disengage the hub module from the backplane, unplug and replug the power cord, and re-seat the module.

10. Plug in your data cables to the hub and the network.

    The Link indicator should illuminate for each connected port on the Slave module.

    If one or more of the ports are in use on the Slave module, the Activity indicator will illuminate.

Your AT-3624TRS repeater is now active in the chassis, serving as a non-managed hub.

Installing the AT-3624TRS in a managed hub configuration

The following procedure details how to install an AT-3624TRS in a managed hub configuration in an AT-C36RS4-1R1 rackmount chassis. This example assumes the following:

- ❑ You are working with a four-slot rackmount chassis
- ❑ Three of the four slots in the chassis will be populated
- ❑ A Master has been installed in slot one
- ❑ A Backup has been installed in slot two
- ❑ You will install a Slave in slot three, leaving slot four empty

1. Remove the interrepeater bus dust cover on the back panel of the module before installing the unit in a rackmount chassis.
2. Remove the rubber feet from the Slaves.
3. Reinstall the screws once the rubber feet are off.

Attention

After removing the rubber feet, it is important to reinstall the screws or the module will expand. (Also see Chapter 2, “Hardware Installation” on page 7.)

4. Attach the chassis guide/handle assembly, with the screws provided with the chassis, to each side of the Slave. Make sure the handles are aligned with the front of the module.
5. Remove the blank faceplate/air-dam assembly from the slot (slot three) where you will be installing the Slave.
6. Slide the Slave along the chassis guide in the rackmount chassis without seating it in the backplane connector.
7. Plug in the Slave’s power cord.
8. Check to see if the Power indicator illuminates.
9. Check to see that the Slave performs a self-test.

   The Slave will temporarily illuminating all port LEDs in sequence, beginning with port 1 and continuing with port 2, port 3 and so forth. The self-test recurs until a port is connected.

10. Align the backplane connector with the interrepeater bus connector on the back panel of the Slave.

11. Seat the interrepeater bus port of the Slave carefully in the backplane.

Attention

When inserting or removing repeater modules, the power cord should remain plugged in (using the hot swapping method). To use the hot swapping method, the module must be disconnected from the backplane before the power cord is unplugged. If a fault occurs (Fault light stays ON), disengage the repeater module from the backplane, unplug and replug the power cord and re-seat the module.

12. Check that the Master downloads management software after the Slave is seated in the backplane connector. During the download:

    - ❑ All LED ports illuminate
    - ❑ The fault LED illuminates
    - ❑ All port LEDs temporarily go OFF to show that download is complete

13. Attach the Slave to the rackmount chassis with standard rackmount screws (not provided).

14. Plug in your data cables to the hub and the network.

15. Check the Link indicators.

    If one or more of the ports on the Slave module is transferring data, the Activity indicator will illuminate.

16. Make sure the empty slot (slot four) is covered with its blank faceplate/air-dam assembly.

Your AT-3624TRS repeater is now active in the chassis, serving in a managed hub configuration.

To install blank faceplate/air-dam assembly

Attention

Blank faceplate/air-dam assemblies are necessary to control air flow and keep the rackmount chassis cool. Chassis are shipped with the faceplate/air-dam assemblies in place. (Also see Chapter 2, “Hardware Installation” on page 7.)

1. Attach a blank faceplate/air-dam assembly to the empty slot.

2. Align the faceplate/air-dam assembly.

3. Slide the assembly along the chassis guides until the notch, on the end of the faceplate/air-dam assembly, connects into the slot at the back of the chassis.

4. Screw the faceplate/air-dam assembly in place on each end with one of the supplied screws.

Chapter 5

Troubleshooting

This section provides a checklist for resolving problems associated with your hub and cabling. The first rule of troubleshooting is to isolate the problem. As you experiment, only vary one factor at a time. Substitute known good equipment to see if the problem persists or is eliminated.

As a preliminary check, perform the following steps

1. **Do not overlook the obvious**—check diagnostic LEDs and make sure the cables and connectors are securely attached.

2. **If there is no power indication**, check to be sure the power plug is properly seated at the repeater and at the AC receptacle.

3. (UTP models only) **If the UTP Link indicator does not illuminate**, make sure the cabling is intact and connected to a functioning port on the network. Check the cable configuration to make sure the connectors are wired correctly and a crossover cable is not necessary (see on for details).

4. **Use only UTP cable designed for use in 10BASE-T applications.** 10BASE-T wiring lengths should not exceed 100 meters (328 ft.). The wiring should be routed away from devices known to emit electromagnetic interference, such as fluorescent lights, photocopiers, power transformers and relay equipment.

5. **If the Link indicator illuminates on a 10BASE-T segment, but data transfer is slow, collision-prone or non-existent**, verify that your UTP cable is of Level 3, 4 or 5. Level 1 and 2 voice-quality cable will not work properly. If the cable is more or less round in section, you probably have data-grade cable. If, however, the cable appears flat (such as “Silver Satin” telephone-type cable), you probably have voice-grade cable which may cause transmission problems. If it looks like telephone cable, double check it. Also, if the wire pairing is incorrect, you may get a Link indication but have high data error rates.

6. **If too many collisions are present on an AUI connection**, check to ensure that the external Ethernet transceiver connected to the AUI port has the SQE Test (Heartbeat) function disabled. Excessive network loading can also cause excessive collisions.

7. **If a fault occurs** (fault light stays ON), disengage the repeater module from the backplane, unplug and replug the power cord, and reseat the module.

Appendix A

Data Cabling Techniques

Depending on the medium you choose, there are certain wiring practices you should follow to ensure the reliability of communication throughout the network. The AT-3600 Series hubs comply with IEEE standards for 802.3 Carrier Sense Multiple Access with Collision Detect (CSMA/CD) Ethernet. The following sections detail cabling techniques and port specifications for IEEE 802.3 media. For comprehensive treatment of these topics, refer to the original IEEE specification.

10BASE-T

The maximum length for 10BASE-T UTP segments is 100 meters (328 ft.).

UTP Wiring Specifications

10BASE-T requires UTP wiring capable of supporting 10 megabit data rates. A serious problem exists concerning identification of modular cable. There are various grades of voice-quality and data-quality cables available. These can appear to be similar externally, although their high-speed data transmission characteristics are radically different.

The identification problem is exaggerated because some suppliers have sold data-quality cables manufactured with voice-quality cabling.

If any voice-quality cabling is used in a 10BASE-T network system, data movement is slow, collision-prone or non-existent. To confuse the issue, the Link indicator on the interface will usually indicate a valid link in such a case.

For the foregoing reasons, it is essential that all cabling used with the 10BASE-T connections be Level 3, 4 or 5. The wire should be 22 to 26 American Wire Gauge (AWG), 100 Ω impedance with 3 to 8 twists per foot. Following these guidelines will help maintain 10 megabit data integrity throughout the wiring system.

As a rule of thumb, if a cable type is flat, it is untwisted and will cause problems. If a cable is more or less round in section, it will work. “Silver Satin” flat cable is out of specification and should not be used.

The six common modular cable specifications and their applicability to 10BASE-T network use are shown in Table 8.

Table 8: UTP Wiring Specifications

Cable Level	Cable Description	AC Character	Specification	Twist/ Foot	10BASE-T OK?
1	Unshielded Untwisted	N/A	CCITT	None	NO!
2	Individual UTP	100 Ω ± 30 Ω	RS232 1BASE5 AT&T PDS	None	NO!
3	Typical Individual UTP	100 Ω ± 15 Ω	T1, AT&T ISDN 10BASE-T IBM Type 3	3-5	YES
4	Enhanced Individual STP	100 Ω ± 30 Ω	EIA, TIA 10BASE-T NEMA	5-8	YES
5	Individual STP	100 Ω ± 30 Ω	EIA, TIA 10BASE-T	8-10	YES
IBM Type 1	Individual STP	150 Ω	PCC FT 1	N/A	NO!

10BASE-T Point-to-Point Cabling

The standard connection when using a hub is from a Data Communications Equipment (DCE) device, such as a repeater, to a Data Terminal Equipment (DTE) device, such as a workstation NIC. This configuration uses a straight-through cable. See Figure 18.

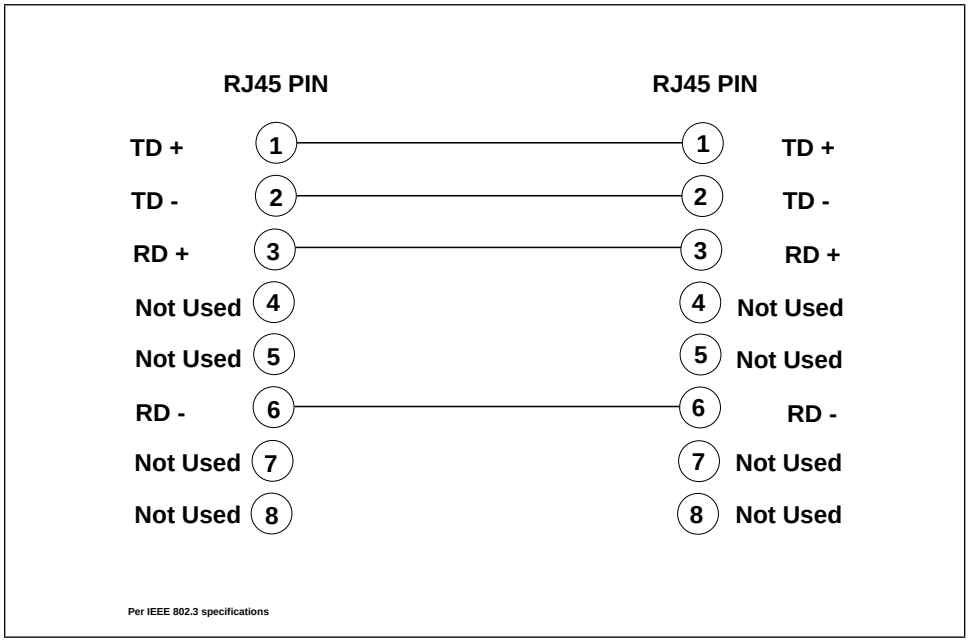

Figure 18: 10BASE-T UTP Cabling Hub-to-MAU (Straight-Through)

On an RJ45 connector, it is important to know where pin 1 is so you can count your pins correctly. Figure 19 shows the location of pin 1.

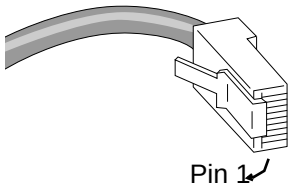

Figure 19: Pin 1 Orientation on an RJ45 Connector

Some situations require a DCE-to-DCE connection, for example, when hubs are cascaded. This can be accomplished with a standard crossover cable, as illustrated in Figure 20.

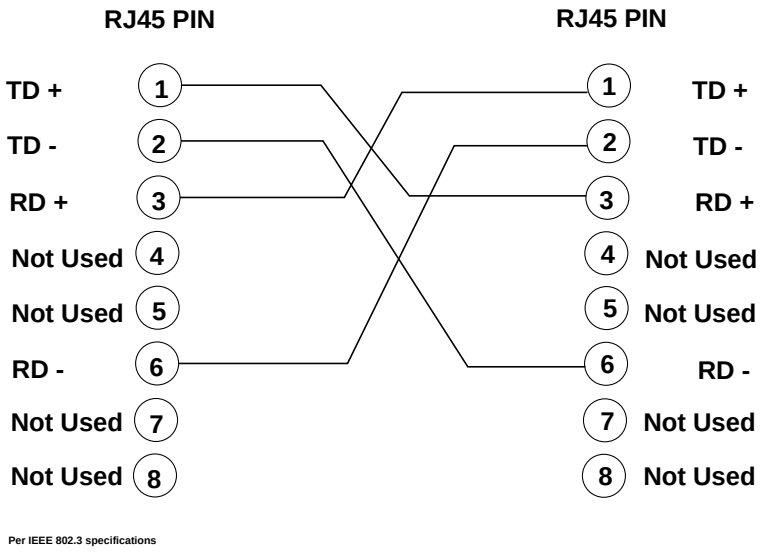

Figure 20: 10BASE-T UTP Cabling Hub-to-Hub or MAU-to-MAU (Crossover)

In both the crossover and straight-through instances, the wire is twisted pair. Figure 21 demonstrates usable and unusable cable wire pairings for the straight-through configuration.

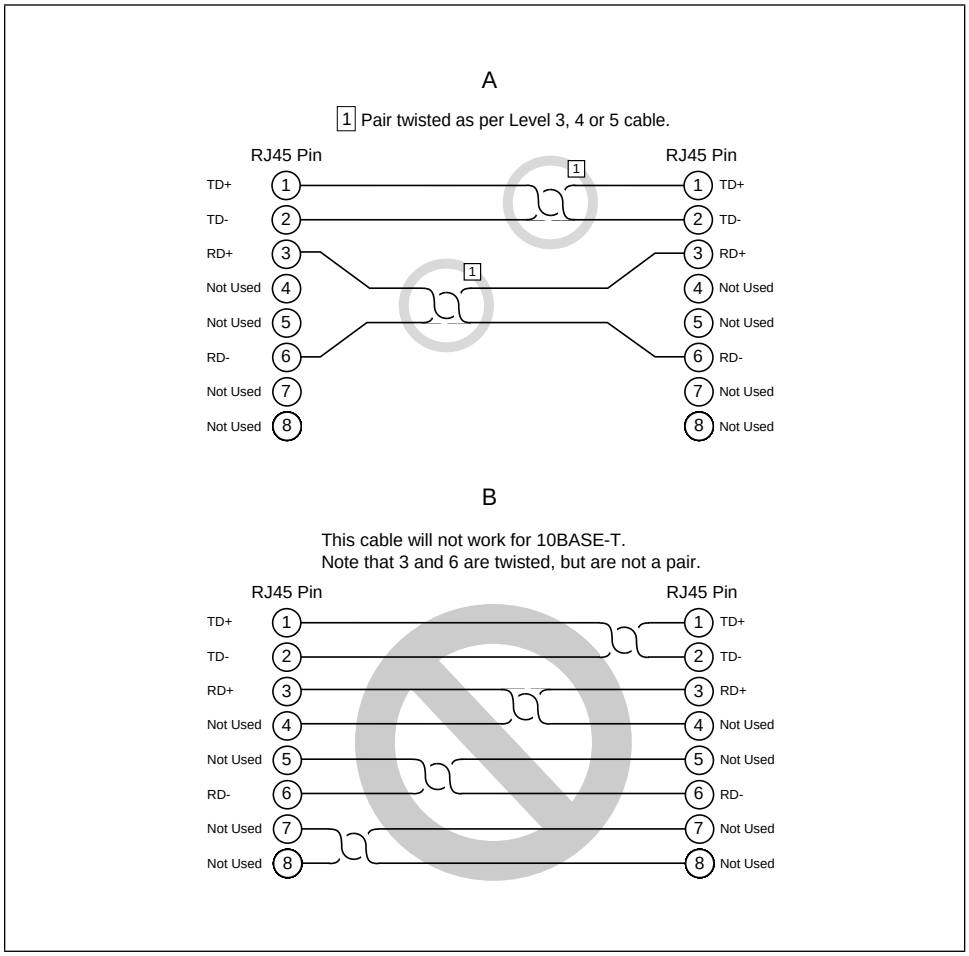

Figure 21: Hub-to-MAU Wiring Usable (Diagram A) and Unusable (Diagram B)

Diagram A is correct because the proper pairs are twisted together. Diagram B is incorrect because the wires for the receive pair, pins 3 and 6, are not twisted together. Diagram B wiring could result in excessive common mode noise and an unacceptably high data error rate.

If you pair pins incorrectly, for example as shown in Figure 21, Diagram B, your network may have a high data error rate. In a straight-through cable, the transmit pins, 1 and 2, are paired, as are the receive pins, 3 and 6.

In a crossover cable, shown in Figure 22, pins 1 and 2, TD+ and TD-, are paired, as are pins 3 and 6, RD+ and RD-. When pins 1 and 2 are crossed over, they connect to pins 3 and 6 respectively; and pins 3 and 6, when crossed over, connect to pins 1 and 2, respectively.

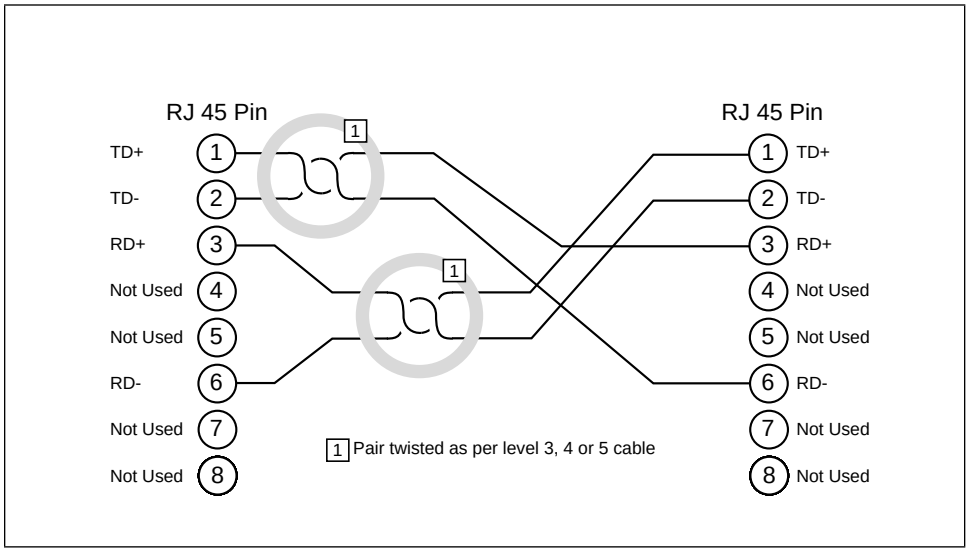

Figure 22: Hub-to-Hub or MAU-to-MAU Wiring

10BASE-FL/FOIRL Ethernet

The IEEE 802.3 10BASE-FL standard supports up to 2,000 meters (6,560 ft.) of multimode duplex fiber optic cable in a point-to-point link which directly attaches two devices. FL is compatible with FOIRL, but FOIRL supports connections of 1,000 meters (3,280 ft.). Duplex refers to support for fiber optic cable pairs, enabling a two-cable fiber optic connection with transmit mode dedicated to one cable and receive mode on the other. The wide dynamic range of a fiber optic interface allows for an easy installation. When connecting fiber optic cable, the receiving pin (RD) is connected to the transmitting pin (TD) and vice versa.

10BASE2 (Thin) Ethernet

For 10BASE2 coax segment configurations, IEEE 802.3 specifications allow 29 or fewer MAUs per cable segment spaced at no less than 0.5 meter (1.64 ft.). The 10BASE2 cable length can not exceed 185 meters (607 ft.) per 10BASE2 cable segment. The worst case propagation delay for a 185 meters (607 ft.) thin Ethernet segment is 950.9 ns. The propagation delay for 10BASE2 Ethernet cable is 5.14 ns/meter. Both ends of the segment must be terminated with a 50 Ω termination with a power rating of 0.5 watts or greater. Earth grounding of the segment shield must take place at only one point on the cable.

10BASE5 (Thick) Ethernet

For 10BASE5 coax segment configurations, IEEE 802.3 specifications allow 100 MAU attachments or less, spaced at multiples of 2.5 meters (8.2 ft.) measured accurately from the cable end (50 Ω terminator included). The 10BASE5 cable segment can not exceed 500 meters (1,640 ft.) in length. Worst case “end-to-end” propagation delay of a 10BASE5 coax segment is 2165 ns. Propagation delay of 10BASE5 Ethernet coax is calculated at 4.33 ns/meter. Both ends of the segment must be terminated with a 50 Ω termination with a power rating of 0.5 watts or greater. Earth grounding of the segment shield must take place at only one point on the cable.

AUI Drop Cables

AUI or Drop cables can be no longer than 50 meters (164 ft.) each. Attachments may be made only to the cable ends at the 15-pin D-shell connector. AUI cables may have a maximum 257 ns propagation delay, as used for computing the worst case propagation delay of a cable system. AUI cable propagation delay is approximately 5.13 ns/meter. This cable internally consists of four shielded twisted pair wires with an overall shield and drain wire; a 15-pin D-shell male connector at one end and a 15-pin D-shell female connector at the other end. Cable impedance is nominally 78 Ω. The AUI cable connects a transceiver attached to a coaxial segment to a DTE (workstation).

Appendix B

Glossary

10BASE2—Also called thinnet Ethernet, thinnet or CheaperNet, a 10 MHz baseband specification. Cable impedance is 50 Ω and maximum coaxial segment length is 185 meters (607 ft.).

10BASE5—Also called thick Ethernet, a 10 MHz baseband specification. Cable impedance is 50 Ω and maximum coaxial segment is 500 meters (1,640 ft.). The cable is commonly referred to as yellow cable. Thick Ethernet cable is typically used as a trunk or backbone path of the network.

10BASE-FL—IEEE 802.3 Fiber Optic Ethernet. A fiber optic standard that allows up to 2,000 meters (6,560 ft.) of multimode duplex fiber optic cable in a point-to-point link.

10BASE-T—IEEE 802.3 UTP Ethernet. Using low cost Level 3 or better UTP wiring, 100 meters (328 ft.) of point-to-point link segments are possible. Uses RJ45 connectors and sometimes 50-pin AMP connectors to a patch panel. Runs at 10 MHz.

50-PIN TELCO (RJ21)—This connector is very common in 10BASE-T wiring. As opposed to the RJ45 connector, the 50-pin Telco connector concentrates up to 12 UTP connections onto one connection. This concentration of UTP ports is then broken out for connection to a punch-down block inside a building's wiring closet. 50-pin Telco connections provide a very clean, uncluttered interface to the building's wiring.

AT-ADAPT-2— A harmonica-style adapter that allows direct conversion from a 50-pin Telco connector to RJ45 receptacles.

ATTACHMENT UNIT INTERFACE (AUI)—Connection between a MAU (transceiver) and a DTE (typically a workstation). Includes a 15-pin D-sub connector and sometimes a 15-conductor twisted pair cable. Maximum length is 50 meters (164 ft.).

BACKUP MODULE— A repeater that behaves as the management module when the Master fails in a department concentrator.

BASEBAND COAXIAL SYSTEM—A system whereby information is directly encoded and impressed on the coaxial transmission medium. At any point on the medium, only one information signal at a time can be present without disruption.

BAYONET NUT COUPLE (BNC) CONNECTOR—A 10BASE2 thin coax connector with push-on BNC locking lug that quickly locks into place with a half twist.

BIT RATE (BR)—This is the rate of data throughput on the medium in bits per second. Ethernet specifies 10 million bits per second.

BRANCH CABLE—The AUI cable interconnecting the DTE and MAU system components also known as a Drop cable.

BIT TIME—The duration of one bit symbol (1/BR). Ethernet specifies a bit time of 100 ns.

CARRIER SENSE—In a LAN, an ongoing activity of a data station to detect whether another station is transmitting.

CARRIER SENSE MULTIPLE ACCESS with COLLISION DETECT (CSMA/CD)—This is the access method employed by IEEE 802.3 LAN transceivers, by which multiple stations compete for use of the transmission medium (coax cable) for data packet transmission and provides for a level of error detection should that transmission be corrupted or impeded by contention for the transmission medium.

COAX SEGMENT—A segment of Ethernet cable that contains MAU.

COAXIAL CABLE—A two conductor (center conductor, shield system), concentric, constant impedance transmission line used as the trunk medium in the baseband system.

COAXIAL CABLE SEGMENT—A length of coaxial cable sections and coaxial connectors and terminated at each end in its characteristic impedance.

COLLISION—An unwanted condition that results from concurrent transmissions on the physical medium.

COLLISION PRESENCE—A signal provided by the PLS to the PMA sublayer (within the physical layer) to indicate that multiple stations are contending for access to the transmission medium.

COMPATIBILITY INTERFACE—The MDI coaxial cable interface and the AUI branch cable interface, the two points at which hardware compatibility is defined to allow connection of independently designed and manufactured components to the baseband transmission system.

CROSSOVER—Wiring is used when connecting a 10BASE-T MAU to another 10BASE-T MAU or a 10BASE-T hub to another 10BASE-T hub. For example, one 10BASE-T MAU would have the TD pair on the same pins as another 10BASE-T MAU. If pins were wired straight, there would be two transmitters on one pair with no receiver. Therefore, the crossover cable crosses the TD pair with the RD pair of UTP cable connecting the TD pins on one end to the RD pins at the other end.

D-SUB CONNECTOR—The AUI cable uses 15-pin D-sub connectors. “D” refers to the shape of the connector shell. Also called miniature D, DB15, or DIX connectors.

DATA COMMUNICATION EQUIPMENT (DCE)—In RS232 specification a module, such as a modem, for connecting a DTE to other equipment. A repeater connected to a terminal or workstation for Omega local management use is wired as a DCE.

DATA TERMINAL EQUIPMENT (DTE)—In RS232 specification a module typically at the end of a segment. The DTE could be an Ethernet workstation, repeater or bridge.

DEPARTMENT CONCENTRATOR—Hub which provides a large number of workstation connections. The term, department concentrator, refers to multiple repeaters housed in an AT-36C8 chassis. See Hub/Repeater, Repeater.

DIX CONNECTOR—See D-Sub Connector

FOIRL — A fiber optic standard that allows up to 1,000 meters (3,280 ft.) of multimode duplex fiber optic cable in a point-to-point link.

HARMONICA ADAPTER—This adapter provides a simple way to convert the 50-pin Telco connection to RJ45 connections.

HEARTBEAT—See SQE

HOT SWAPPING— The process of replacing a hub module without bringing down the network. This process occurs by sliding an active module into a fully powered up concentrator, replacing a failed module.

HOUSE WIRING—House wiring is the existing wiring inside a building. This wiring generally originates from one or more wiring closets such as a telephone room. Some older buildings may have wiring unsuitable for 10 megabit data rates. In these circumstances, it is recommended that the wiring is tested with a 10BASE-T signal/wire tester.

HUB/REPEATER—A hub is a central signal distributor. It is used in a wiring topology consisting of several point-to-point segments originating from a central point. The term hub is often used interchangeably with the term repeater. Multiport 10BASE-T, 10BASE2 and fiber optic (10BASE-FL, FOIRL) repeaters are considered hubs. See Repeater.

HUB-to-HUB WIRING—See MAU-to-MAU Wiring

HUB-to-MAU WIRING—UTP cables for 10BASE-T hub-to-MAU or NIC cards are wired straight-through. An RJ45 receptacle at the hub would wire pin-to-pin to the RJ45 receptacle at the MAU.

IMPEDANCE—An electrical characteristic of a circuit dealing with the combination of the AC and DC resistance and the appearance of that resistance to attached circuits.

JABBER LOCK-UP—The MAU's ability to automatically inhibit the transmit data from reaching the medium if the transmit data time exceeds a specified duration. This duration is in the range of 20 ms to 150 ms. Jabber lock-up protects the medium from being overrun with data packets from a possibly defective device.

JAM—This is a term used to describe the collision reinforcement signal output by the repeater to all ports. The jam signal consists of 96 bits of alternating 1s and 0s. The purpose is to extend a collision sufficiently so that all devices cease transmitting.

JITTER—The fluctuation of the data packet in respect to a standard clock cycle. Jitter is undesirable and must be minimized.

LINK SEGMENT—The link segment of coaxial cable is a segment which has no MAU devices but links two LAN devices together such as repeaters.

LINK TEST—In 10BASE-T Ethernet there is a link test function that validates the UTP link. This consists of a pulse transmitted from point A on one pair and validated at point B. Point B also transmits a pulse on the second pair to be validated by point A. These pulses occur during media idle states (in between packets).

MANAGED MODULE— An intelligent repeater in a department concentrator chassis that makes management data available to the Master.

MANAGEMENT AGENT—Software that is used to view hub activity and set hub variables.

MASTER—A repeater in the top-most position in a department concentrator chassis that contains and downloads the management agent software to Backup and Slaves. The Master contains the only active image of the management agent and controls the management functions of the Backup and Slaves.

MAU—See Medium Attachment Unit

MAU-to-MAU, HUB-to-HUB WIRING—10BASE-T MAU-to-MAU or hub-to-hub wiring generally requires a crossover cable located somewhere along the UTP cable run. This may commonly occur at the punch-down block or between the RJ45 wall receptacle and the workstation.

MAU/TRANSCEIVER—An Ethernet transceiver is a MAU. A 10BASE-T MAU interfaces the UTP media to an AUI port on a workstation, repeater, bridge or other Ethernet devices.

MDI/MDI-X—See Medium Dependent Interface

MEDIUM ATTACHMENT UNIT (MAU)—In a LAN, a device used in a data station to couple the DTE to the transmission medium.

MEDIUM DEPENDENT INTERFACE (MDI)—The mechanical and electrical interface between the trunk cable medium and the MAU. MDI-X is another version of the interface that enables like devices to connect, using different pin-outs, avoiding conflicts that occur when receiving and transmitting packets use the same pin-out.

MODULE—A single repeater when it is mounted with other repeaters in an AT-36C*x* or AT-36E*x* department concentrator chassis.

N-SERIES—A barrel shaped, threaded connector used on 10BASE5 (thick Ethernet) coaxial cable.

PATCH PANEL—A 10BASE-T patch panel may be between a punch-down block and UTP workstation. The patch panel generally has a female RJ45 connector on the front for each workstation and a Telco (RJ21) connector on the back, which are wired to a punch-down block. This provides a convenient way for the installer or network manager to connect the hub 10BASE-T ports into the desired building locations.

PHYSICAL MEDIUM ATTACHMENT (PMA)—The portion of the MAU that contains the functional circuitry.

PHYSICAL SIGNALING (PLS)—That portion of the physical layer contained within the DTE that provides the logical and functional coupling between MAU and data link layers.

POLARITY CORRECTION—Many 10BASE-T UTP ports have a polarity correction function. If the UTP wiring has RD- and RD+ inadvertently crossed, the polarity correction function will sample the signal and electrically swap the wires. If the TD- and TD+ wires are crossed, the correction would occur at the MAU on the other end of the UTP link. This occurs within a single pair and should not be confused with the crossovercrossover cable.

PROPAGATION DELAY—The time it takes a signal to travel from the input of a system component to the output. Usually measured in nanoseconds. IEEE 802.3 has specific propagation delay maximums for computing propagation budgets when designing a LAN. Cable length plays a major role in propagation delay. [i.e, a 50 meters (164 ft.) AUI cable has a maximum allowable propagation delay of 257 ns.] The propagation delay of cable is dependent on length and velocity factor of the cable type. There are also propagation delays associated with electronics attached to the system.

PUNCH-DOWN BLOCK—The punch-down block is the wiring panel where the house wiring from the building's offices terminates. This is where many 10BASE-T hubs would be located. Wiring installers use a special punch-down tool to insert the UTP wire for data and voice applications.

REPEATER—A device used to extend the length, topology, or interconnectivity of the physical medium beyond that imposed by a single segment, up to the maximum allowable end-to-end trunk transmission line length. Repeaters perform the basic actions of restoring signal amplitude, waveform and timing applied to normal data and collision signals.

RJ45—This connector is a 10BASE-T standard for connecting UTP cabling. They are inexpensive and easy to install onto UTP cable.

SIGNAL QUALITY ERROR (SQE)—Also referred to as Collision or Collision Presence. This occurs when two devices attempt to transmit at the same time which is an illegal condition.

SIMPLE NETWORK MANAGEMENT PROTOCOL (SNMP)— SNMP is a TCP/IP protocol that generally uses the User Datagram Protocol (UDP) to exchange messages between a management information base and a management client residing on a network. Since SNMP does not rely on the underlying communication protocols, it can be made available over other protocols, such as XNS or DECnet.

SLAVE— A repeater that behaves as a “dumb” module managed by a Master in a department concentrator chassis. Slaves operating standalone perform only simple regeneration and retiming tasks associated with repeating and are not manageable.

SQE TEST—Commonly referred to as Heartbeat, is a special 802.3 signal sent by the MAU to the DTE to test the collision detection function. Some DTE want SQE and others do not. Repeaters do not want SQE Test.

STANDADLONE—Repeater operating as a hub on its own; i.e., not a module among other modules in a department concentrator chassis.

STRAIGHT-THROUGH—A type of wiring connection where the pins of one connector connect to the same pins of another connector. For example, pin 1 of one connector connects to pin 1 of another connector.

TCP/IP PROTOCOLS—A set of protocols for inter-computer communication, including network level (Internet Protocol), transport level (Transmission Control Protocol or TCP), and application level protocols (for example, Telnet terminal emulation). TCP/IP has been used for many years in two country-wide networks, the ARPANET and MILNET. Recently, TCP/IP has become very popular with users of a variety of multi-user computer systems and engineering workstations. Most UNIX computers use TCP/IP over Ethernet as the main inter-computer networking technology. TCP/IP is also popular among PC users, particularly as a means of communication with large multi-user computers.

TELCO CONNECTOR— A 50-pin receptacle that plugs into the front of the hub, enabling cables from external devices to connect to the hub.

THICK ETHERNET—See 10BASE5

THIN ETHERNET—See 10BASE2

TRUNK CABLE—The trunk coaxial cable system.

UNMANAGED MODULE— A repeater that behaves as a “dumb” repeater in a department concentrator chassis (i.e., without a Master). It performs simple repeating tasks like packet retiming and regeneration, but is not managed.

UNSHIELDED TWISTED PAIR (UTP)—A cable used in 10BASE-T wiring that consists of at least two twisted pairs of 22 to 26 AWG wire. The pairs should have at least 3 twists per foot and have an impedance of 100 Ω. Level 3 and Level 4 UTP cable generally fits these criteria.

Appendix C

Technical Support Fax Order

Name _____

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Incident Summary

Model number of Allied Telesyn product I am using _____

Firmware release number of Allied Telesyn product _____

Other network software products I am using (e.g., network managers)

_____

Brief summary of problem _____

_____

Conditions (List the steps that led up to the problem.) _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Detailed description (Please use separate sheet)

Please also fax printouts of relevant files such as batch files and configuration files. When completed, fax this sheet to the appropriate ATI office. Fax numbers can be found on .

Appendix D

AT-3624TS/AT-3624TRS Manual Feedback

Please tell us what additional information you would like to see discussed in the manual. If there are topics you would like information on that were not covered in the manual, please photocopy this page, answer the questions and fax or mail this form back to Allied Telesyn International (ATI). The mailing address and fax number are at the bottom of the page. Your comments are valuable when we plan future revisions of the manual.

On a scale of 1 to 10 (10 being most important), rate the importance of the following topics in this manual:

Hardware Installation	_____	Troubleshooting	_____
AT-3624TRS Connectivity	_____	AT-3624TS Connectivity	_____
Data Cabling Techniques	_____	Reading the LEDs	_____
Cabling	_____	Configurations	_____

I found the following the most valuable _____

_____

_____

I would like the following more developed _____

_____

_____

I would find the manual more useful if _____

_____

_____

Please fax or mail your feedback. Fax to 1-206-481-3790. Or mail to:
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Appendix E

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Appendix F
Index

Numerics

50 pin Telco receptacle 18

A

adapters
  AT-ADAPT-2 47
  harmonica 18, 49
  octopus 2, 15, 18
address
  Sunnyvale 57
  world wide web 57
ambient temperature 7
american wire gauge (AWG) 41
application specific integrated circuits (ASICs) 3
application-specific integrated circuit (ASIC) 29
attachment unit interface (AUI) 3, 47
attachment unit interface AUI 48
AUI 4, 17, 31, 46

B

baseband coaxial system 47
bit rate (BR) 48
bit time 48
Boot Protocol (BootP) 6

C

cable color 20
Cable colors 20, 21
cabling
  10BASE2 11, 12, 18, 32, 45, 47, 48
  10BASE5 46, 47
  10BASE-FL 11, 12, 18, 32, 45, 47
  10BASE-T 3, 4, 11, 12, 17, 18, 22, 31, 32, 33, 39, 41, 42, 47, 48
  1BASE5 42
  branch cable 48
  crossover 32, 39, 43, 44, 48
  data-grade 39
  data-quality 41
  FOIRL 11, 45, 49
  house wiring 49
  hub-to-hub 49
  hub-to-MAU 49
  impedance 46, 47, 49
  MAU-to-MAU UTP, hub-to-hub 50
  silver satin 39, 41
  specifications 42
  straight-through 22, 32, 42, 43, 44, 52
  techniques 41
  thick Ethernet 52
  thin Ethernet 52
  trunk cable 52
  unusable 43
  usable 43
  UTP 29, 32, 33, 39, 41, 47
  voice-grade 39
  voice-quality 41
carrier sense 48
carrier sense multiple access with collision detect (CSMA/CD) 41, 48
Chapter 2 38
chassis 36
  arrangements 5
  concentrator 7
  department concentrator 1, 3, 5, 15, 16, 29, 30, 47
  desktop 3, 4, 5, 7, 16, 17, 30
  rackmount 3, 4, 5, 7, 16, 17, 23, 25, 26, 30, 34
coax segment 48
coaxial cable 48
coaxial cable segment 48
collision presence 48
compatibility interface 48
compliance
  IEEE 802.3 2, 3, 4, 16, 17, 30, 31, 41, 45, 47, 48
concentrator chassis 7
configuration
  hub module 3, 16, 30

managed hub 8, 12, 17, 23, 25
managed module 3, 16, 30
network port 17
non-managed hub 23, 25
standalone 3, 8, 12, 16, 17, 23, 30, 51
configuration, port 17
configurations 3, 16, 30, 31
managed hub 31, 36
non-managed hub 34, 36
standalone 31, 34
connectivity 4
AT-3624TRS 29
connectors
50-pin Telco 2, 12, 15, 18, 19
50-pin telco 3, 4, 47, 49
AT-ADAPT-2 2, 15, 18
bayonet nut couple (BNC) 48
BNC 11
DIX 49
D-sub 48
interrepeater bus 34
N-series 50
RJ21 11
RJ45 3, 4, 11, 12, 18, 29, 43, 47, 49, 51
SC 32
SM 32
SMA 12, 18
ST 11, 12, 18, 32
controllers 4, 17, 31
cover panels
AT-3624TRS 4, 5
AT-3624TS 4

D

data communication equipment (DCE) 48
data communications equipment (DCE) 42
data terminal equipment (DTE) 42, 49
department concentrator 4, 7, 16, 17, 30, 49

E

Ethernet 2, 3, 16, 22, 30, 32, 41, 45, 47

F

fiber optic 32, 45, 47
firmware cassette slot 12, 23, 34
forms
fax order 53
manual feedback 55

G

glossary 47

H

hot swapping 10, 26, 35, 37, 49
hub 1, 7, 15, 20, 25, 29, 36, 39
Hub MIB 2, 16, 30
hub MIB 2, 16, 30

I

indicator
activity 22, 24, 25, 26
collision 22
fault 22
link 8, 22, 24, 25, 26, 33
no link 22
partitioned 22
power 22, 24
receiving 22
self-test 23
indicators
activity 8, 10, 32, 34, 36, 37
collision 33, 48
fault 13, 32
heartbeat 39, 49
hub 32
hub status 12
LED 4, 17
link 10, 34, 36, 37, 39, 41
link test 50
master 13
no link 33
partitioned 33
port 12, 33
power 8, 10, 13, 24, 32, 34, 35
receiving 33
self-test 33
SQE test 39
status 34
indocator
power 26, 36
installation
hardware 7
location 7
power 7
site preparation 7
ventilation 7
installation, hardware
ventilation 7
installation, sample 22
interrepeater bus connector 12, 23

J

jabber lock-up 49
jam 49
jitter 49

L

LEDs
hub 13
link segment 50

local area network (LAN) 48

M

managed module 50
management
  omega agent 2, 16
management agent 2, 3, 4, 6, 12, 16, 17, 24, 25, 26, 29, 30, 31, 35, 36, 37, 47, 50, 51
  management agent 50
  Master 16
  Omega 48
  omega 30
  repeater 23
  repeaters 34
management information base (MIB-II) 2, 16, 30
MAU 45, 50
MAU/transceiver 50
MDI/MDI-X 50
Media Access Unit (MAU) 22
media access unit (MAU) 32
medium attachment unit (MAU) 50
medium dependent interface (MDI) 50
micro transceivers 18, 32
  AT-210T 12, 18, 32
  AT-210TS 32
  AT-MX10 12, 18, 32
  AT-MX10S 32
  AT-MX20T 32
  AT-MX25F 12, 18, 32
  AT-MX26F 12, 18, 32
  AT-MX40F/ST 32
  AT-MX50F/SM 32
  AT-MX55F/SC 32
module 50
  AT-3606F 16
  AT-3606F/SMA 16
  AT-3608 16
  AT-3612T 16
  AT-3612TR 16
  AT-3624TRS 7
  AT-3624TS 5, 7, 15, 17, 19, 22, 23, 25
  backup 24, 25
  master 4, 12, 16, 17, 24, 25, 26
  slave 4, 16, 17, 23, 25, 26
modules
  AT-3606F 2, 6, 30
  AT-3606F/SMA 2, 30
  AT-3608 2, 30
  AT-3612T 2, 6, 30
  AT-3612TR 2, 30
  AT-3624TRS 1, 2, 5, 6, 29, 30, 32, 33, 35
  AT-3624TS 1, 2, 5, 31, 34, 36
  backup 6, 13, 35, 36, 47
  hub/repeater 49
  master 2, 3, 6, 13, 30, 31, 35, 36, 37, 50
  slave 1, 3, 6, 29, 30, 31, 34, 36, 51
  slaves 35

N

Network Interface Controller (NIC) 22
network interface controller (NIC) 32
NIC 42

P

patch panel 19, 50
physical medium attachment (PMA) 50
physical signaling (PLS) 51
polarity correction 51
port
  AT-3624TRS 31
  network 31
ports
  AUI 11
  network 11
  station 11, 32
power supply
  international versions 7
  power supply 3
  U.S.A. versions 7
propagation delay 51
punch-down block 19, 20, 51

R

rackmount
  AT-C36RS4-1R1 36
rackmount chassis
  AT-36C2 24
receiving pin (RD) 45
repeater 4, 5, 7, 12, 15, 16, 17, 19, 22, 23, 24, 25, 26, 51
repeaters 1, 2, 3, 5, 6, 29, 30, 31, 32, 33, 34, 35, 36, 37, 47, 49, 50, 51
rubber feet 9

S

sales information 57
signal quality error (SQE) 51
Simple Network Management Protocol (SNMP)
  management information base (MIB) 6
simple network management Protocol (SNMP) 16
simple network management protocol (SNMP) 2, 3, 30, 51
SQE test 51
station ports 12, 18
status indicators 12, 23
STP 42

T

TCP/IP protocols 52
technical support 57
  address
    Bothell 57
  compuserve 57

fax numbers 57
telephone 57
telco connector 52
transmitting pin (TD) 45
troubleshooting 39
check diagnostic 39
fault occurs 39
incident summary 53
indicator 39
power plug 39
slow data transfer 39
wiring lengths 39
troublshooting
too many collisions 39

U

unmanaged module 52
unshielded twisted pair (UTP) 3, 4
unshieled twisted pair (UTP) 52
UTP 19, 22, 42

V

ventilation 7

W

wiring 3, 4, 11, 12, 17, 18, 22, 29, 31, 32, 33, 39, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 52
rules 23